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By-Moshy, Claire A.
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This six-volume teacher workbook introduces the teacher to the design of the Individually Prescribed Instruction procedure (IPI)--particularly as it is applied in mathematics--and instructs him in the use of its objectives and tools through pretest-posttest lessons. Following initial lessons in the history and procedures of individualized instruction and the IPI system, four fundamental criteria of behavioral objectives (learner activities or products) are explained and related in volume 2 to the Mathematics Continuum, which permits individual placement and sequencing of students through elementary school in 13 areas (such as addition) at six levels of competency, determined through four types of achievement tests: placement, curriculum embedded, pretest, and posttest. Separate sections on each test type in volume 3 are calculated to train the teacher in diagnosing student achievement. The remaining three volumes develop the teacher's proficiency in planning prescriptions on the basis of his continuing analysis of test results and classroom observations provided in five simulated case studies (one in the form of an audio disc). IPI materials are reproduced throughout the document. Three explanatory 33 1/3 records accompany the six volumes when ordered from the publisher. (LP)

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TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 1

Individualized Instruction and IPI

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

SP002419

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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INDIVIDUALIZED INSTRUCTION AND IPI

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AN OVERVIEW OF INDIVIDUALIZED INSTRUCTION AND IPI

This section is designed to present the elements of a generalized system of individualized instruction and to describe how a teacher uses them to individualize instruction in the classroom. In addition, this section introduces IPI as a specific system of individualized instruction and describes how the elements of IPI help the teacher individualize instruction.

HISTORY OF INDIVIDUALIZATION

PRETEST: Section I: History of Individualization

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under

100%. Discuss these pages with other teachers working through this section.

8. Use the pretest as a posttest. (Alternate using the two test forms.)

9. Work toward 100% mastery.

Answer true or false:

1. The attempts to individualize instruction extend back into the beginning of American education. ________

2. IPI is the first systematic plan designed to individualize instruction. ________

3. Experimentation with individualized instruction has shown that this type of instruction can increase motivation and reduce retardation of students. ________

ANSWER KEY

PRETEST: Section I: History of Individualization

1. True

2. False

3. True

HISTORY OF INDIVIDUALIZATION[1]

Individually Prescribed Instruction is a procedure designed to permit the school to more nearly meet the needs of the individual pupil. As such it is a part of a rather long term tradition in the historical development of education. Most educators and psychologists have long recognized the importance of adapting instruction to the individual, but efforts to achieve this, although quite numerous, have never been fully seccessful. To understand the place of IPI it is useful to have some comprehension of the previous history of efforts in this area. This is a brief introduction to this background. The reader is encouraged to supplement this by additional study in other sources.

A survey of the history of instruction indicates that formal learning began very much as an individual affair; that is, pupils came to school to receive instruction individually from the teacher. Education was generally for a select few; therefore, fewer pupils attended school. This made possible the provision of individualized instruction for those students.

---

[1] This brief history of individualization has been drawn from Scanlon, Robert G., Factors Associated With a Program for Encouraging Self-initiated Activities by Fifth and Sixth Grade Students in a Selected Elementary School Emphasizing Individualized Instruction, Doctoral Dissertation, University of Pittsburgh, 1966.

For example, in the one-room school pupils proceeded on an individual basis rather than an intact groups. As education involved a larger and larger fraction of the population, it became necessary to deal with pupils in grade-level groups, and individualized instruction diminished. However, as knowledge of the significance of awareness of differences among pupils has increased, many efforts have been made to individualize instruction, even within the context of schools offering mass education.

Systematic plans for providing instruction on an individual basis date back as far as 1888 with the work of Preston Search. Washburne and Billet point out that the efforts of Frederick Burk in developing materials for individual instruction are among the best known.

Shane reviewed individual differences in the historical perspective of school organization plans. He notes that:

> In general, during the past century, educators have endeavored: (a) to reduce individual differences found in non-graded schools of the seventeenth and eighteenth century by introducing grade levels,

> (b) to make the graded approach less arbitrary by permitting pupils to progress at different rates of speed on "multiple-tracks" or individualized programs, (c) to organize students within a given grade level through ability grouping, and (d) to introduce ungraded grouping, especially during the early elementary years, as in Milwaukee during the early 1940's.

A historical overview of organizational plans since 1850 indicates that there has been considerable debate and little agreement on the best framework for teaching and learning. Old ideas have continually reappeared on the educational scene. A genuinely novel approach has occasionally made its appearance, but no one best kind of classroom organization has ever found universal acceptance. Shane further notes that the historically significant plans dealing with individual differences within the organization of the school have been related to grouping for instruction.

Experimentation with individualized instruction has demonstrated that it can produce desirable results. Several researchers have noted that individualization of school programs show evidence of the following: time is saved; retardation of students is reduces; a motivating factor is present. Henderson and others conclude, "Paced instruction designed to insure success as a reward for individual effort is a prominent characteristic of most corrective programs." They further state, "It is possible that a major effect of this technique is a gradual development of a new self-reliance, which releases the child from a dependence upon others and permits him to deal more effectively with the printed page." Mayer-Oakes reports a gain of 25 per cent in proportion of students passing the state-wide examination after experience with the Dalton Plan. Peters' findings, based on thirteen experiments, note favorable results for individualizing instruction when comparing the contract plan and the recitation method.

Berson, Jones and Jones, Webster and others and Goodlad and Anderson have provided research to substantiate great differences among individual pupils. These researchers clearly state that great differences in physical development, motor, intellectual, emotional, and social behavior do exist. Research efforts of Washburne and Marland, Jones, and Peters note attempts to provide for individual differences. Jones also points out that when provisions are made for some of the differences, classroom instruction can be made more effective.

This limited review of individual differences and attempts at individualized instruction is by no means complete. The previous brief overview only highlights some of the research and programs concerned with individual differences.

POSTTEST: Section I: History of Individualization

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Answer true or false:

1. The concern with individualing instruction is a recent development in the United States. ________

2. Multiple track programs and ungraded groupings have been used to increase the individualization of instruction. ________

3. Research has shown that classroom instruction becomes more effective when provisions are made for individual differences. ________

ANSWER KEY

POSTTEST: Section I: History of Individualization

1. False

2. True

3. True

OVERVIEW OF INDIVIDUALIZED INSTRUCTION

The teacher defines a system of individualized instruction:

1. Names the major components and explains how they work together.
2. Discriminates between instances of individualized and group instruction.
3. Describes the required characteristics of each component.

PRETEST: Section I: Overview of Individualized Instruction

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages on which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Answer true or false:

1. Individualized instruction is designed primarily for the few student's in a class whose learning needs are so different that they demand special attention ________

2. In individualized instruction, it is permissible to use small group instruction. ________

3. A teacher identifies five students having repeated difficulties with addition in solving two-step problems. This is an example of individualized instruction. ________

4. The teacher organizes her class into high, average and low reading groups based on reading inventory scores. This is an example of group instruction. ________

5. The teacher guides the class through a systematic review of the science assigned to the previous grade. This in an example of group instruction.

6. Individualized instruction limits the materials groupings and teaching methods used in a class. ________

7. Teaching methods are used to get the student together with the selected materials and equipment. ________

8. Individual rates of progress are possible when instructional time is varied for each group of students ________

9. In selecting materials and equipment the teacher chooses those items that are matched to the students instructional objective. ________

10. Both student and teacher work toward mastery of the instructional objective. ________

Complete:

1. Students behavior gives the teacher information about the student's:

   a. ______________________________

   b. ______________________________

   c. ______________________________

2. The six kinds of instructional resources used by a teacher to individualize instruction are:

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

   f. ______________________________

ANSWER KEY

PRETEST: Section I: Overview of Individualized Instruction

True-False:

1. F
2. T
3. T
4. T
5. T
6. F
7. T
8. F
9. T
10. T

Completion:

1. a. Mastery of instructional objective
   b. Learning needs
   c. Learner characteristics
2. a. Instructional objectives
   b. Diagnostic instruments
   c. Materials and equipment
   d. Learning settings
   e. Teaching methods
   f. Instructional times

OVERVIEW OF INDIVIDUALIZED INSTRUCTION

The central question of concern to teachers is how to meet the needs of the individual student in a school system geared to educate the masses through group instruction. Teachers generally have handled the response to this question by thinking about individualized instruction in terms of instruction for a few students whose learning needs are so different that they demand special attention. Students requiring remedial work that cannot be handled by group instruction are tutored by the teacher. Very bright students are singled out for independent work called "enrichment". In this way the teacher handles the extremes in the class with the purpose of bringing them to the point where they can rejoin the group. Essentially by making individual arrangements for these students, the teacher works towards minimizing their individual differences so that they are more manageable in group instruction.

This appears to be a contradictory way of thinking about individualizing instruction. However, a teacher has no choice in the face of persistent demands to individualize teaching in a system designed for and geared to group instruction. As a result, the teacher is forced to limit individualized instruction to the few students who can be handled through tutoring or independent study.

However, individualized instruction as a way of teaching requires that each individual student, rather than the group, be the starting point for all instructional decisions. This is the only restriction in the definition. The teacher is free to use any materials, groupings, teaching methods, etc. needed to carry out these instructional decisions.

The following statements present a set of typical classroom practices which describe instances of individualized or group instruction. Using the criterion that individualized instruction requires that the learning needs of the individual student form the basis for all instructional decisions, you are asked to decide which statements describe individualized instruction and which describe group instruction. You will need a 5 x 8 card to uncover the answers and explanations for each item.

THE FOLLOWING PRACTICE MATERIALS AND EXERCISES ARE SELF-CORRECTING. SLIDE A 5 X 8 CARD DOWN THE PAGE UNTIL YOU SEE A ROW OF DOTS.

....

THEN STOP. READ THE STATEMENT AND CHECK THE COLUMN ON THE RIGHT WHICH INDICATES WHETHER OR NOT THE STATEMENT DESCRIBES INDIVIDUALIZED INSTRUCTION OR GROUP INSTRUCTION. SLIDE THE CARD DOWN UNTIL YOU SEE A ROW OF ASTERISKS.

****

THEN STOP. READ THE SUGGESTED ANSWER. CONTINUE THE PROCEDURE UNCOVERING EACH STATEMENT AND THEN THE SUGGESTED ANSWER.

EXERCISE

CHECK ONE

		IND.	GROUP
1. a.	Administers informal reading inventory to each student.		
b.	Organizes class into high, average and low reading groups based on inventory scores scores.		
c.	Assigns a different basal reader to each group.		

....

a.	The teacher is measuring the learning needs of individual students in reading.		
b.	By organizing students into groups, the teacher is orienting her teaching toward group instruction.		
c.	By assigning a text to each group the teacher is orienting her teaching toward group instruction.		

****

CHECK ONE

IND.	GROUP

2. a. Analyzes difficulty a student is having with addition and subtraction facts up to ten.

   b. Gives student homework assignment consisting of arithmetic worksheets (facts 1-10) and counting rods.

....

a. The teacher is diagnosing an individual student's learning problem.

b. The teacher is assigning materials for an individual student's learning need.

****

3. Decides to put the class through a systematic review of all the science assigned to the previous grade.

....

This activity assumes all the students have learned and forgotten the same things. It also requires all students to work through the review at the same rate.

****

4. Recommends highly-talented student for piano lessons in lieu of scheduled music class.

....

The teacher is providing the student with music instruction suited to his particular talent.

****

5. a. Identifies five students having repeated difficulties with addition in solving two-step problems.

   b. Administers test on addition facts to five students. Two pass (100%, 95%); three fail (25%, 70%, 75%).

CHECK ONE

IND. GROUP

c. Decides the 70% and 75% students need additional drill and assigns them to drill each other with flash cards.

d. Assigns the 25% student to supplementary worksheets and disks; checks on him frequently.

e. Scolds the two remaining students for being careless in solving two-step problems.

....

a. The teacher is singling out individual students for further attention.

b. The teacher is measuring the achievement of the individual student.

c. In this case, the 70 & 75% students' individual learning needs are identical and can be met in a group activity.

d. The 25% student is assigned an activity and materials suited to his learning need.

e. The teacher has eliminated the possibility of poor recall of addition facts in the case of these two students. However, their individual learning problems are still undiagnosed. The teacher assumes both are careless.

****

6. Tutors a student during a snack time so he can catch up to the class in spelling.

....

This is a tricky statement. It is true that the teacher is working intensively on a student's individual learning needs. However, she wants to fit him back into a system of group instruction. Employing an occasional individualized technique to facilitate group instruction cannot be considered individualized instruction.

END OF EXERCISE

Once the teacher decides that the individual student and what he needs to learn are the basis for all instructional decisions, the teacher has taken the first step in individualizing instruction. The next step includes organizing all the instructional resources available to the teacher into a system that creates a learning environment suited to the individual learner. The instructional resources needed are:

1. Instructional Objectives: A description of the intended outcomes of instruction. It may be expressed as a very broad, general goal, a more specific goal or a very specific description of student behavior. Depending upon its degree of specificity, it may be called a goal, aim, purpose, objective (instructional or behavioral), skills, etc.
2. Diagnostic Instruments: Testing devices and assessment procedures used to gather data on student behavior in terms of learning needs and characteristics.
3. Materials and Equipment: All printed materials, audio-visual aids, mechanical devices, laboratory supplies, and objects that contain or convey

information in an instructional program.

4. Teaching Methods: Specific procedures for guiding a student in learning a new behavior. The method, selected by the teacher, may or may not require the teacher's direct supervision as in the use of small group discussion or self-instructing materials.
5. Learning settings: Arrangements or groupings of students ranging from one student to large group instruction with or without the direct involvement of the teacher. The groups are formed on the basis of individual needs and are not permanent.
6. Instructional time: The amount of time a student spends in a subject area (flexible scheduling) or on a particular learning goal (pacing).

All the objects, devices, physical facilities and arrangements described above are instructional resources familiar to teachers and students in any instructional program. However, in individualized instruction the teacher and student use these resources in special ways. The teacher creates a unique program of studies for the individual student by choosing a specific instructional objective to be mastered by the student and deliberately selecting those instructional resources that will help him master the objective. The student works on his program under the teacher's guidance. How the student behaves while working in the program tells the teacher what he still needs to learn, what he has learned and how he reacts as a learner to the program created for him. This relationship between the teacher and student is shown in Figure 1.

Figure 1: A System of Individualized Instruction

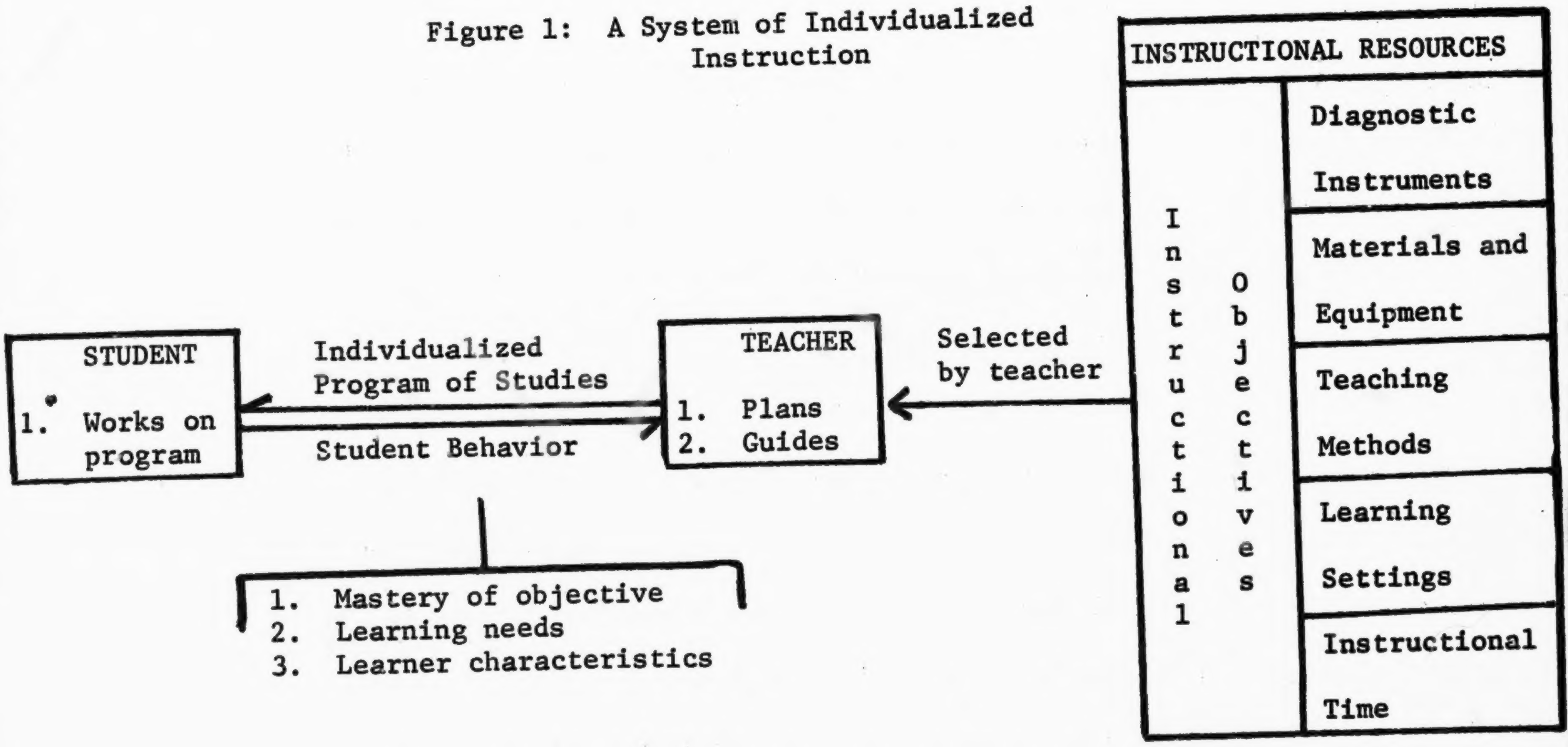

STUDENT
1. Works on program
Individualized Program of Studies
Student Behavior
TEACHER
1. Plans
2. Guides
Selected by teacher
1. Mastery of objective
2. Learning needs
3. Learner characteristics
INSTRUCTIONAL RESOURCES
Instructional Objectives
Diagnostic Instruments
Materials and Equipment
Teaching Methods
Learning Settings
Instructional Time

Figure 1 represents a system of individualized instruction in which a teacher plans an individualized program of studies for a student by selecting appropriate resources from a larger set of instructional resources. The teacher guides the student as he works through the program. The student's behavior in the program in turn tells the teacher about his:

1. Mastery of the objective: Minimum acceptable performance of the stated objective.
2. Learning needs: A behavior or part of a behavior that a student must master. What exactly the student needs to learn in relation to a particular learning goal.
3. Learner characteristics: A set of student behaviors which can facilitate or impede his learning something new. Such things as organic development and peer-group relations affect the student's learning process and are characteristic of how he performs in school.

Based on this information, the teacher continues to develop the student's program of studies based on individual needs and characteristics.

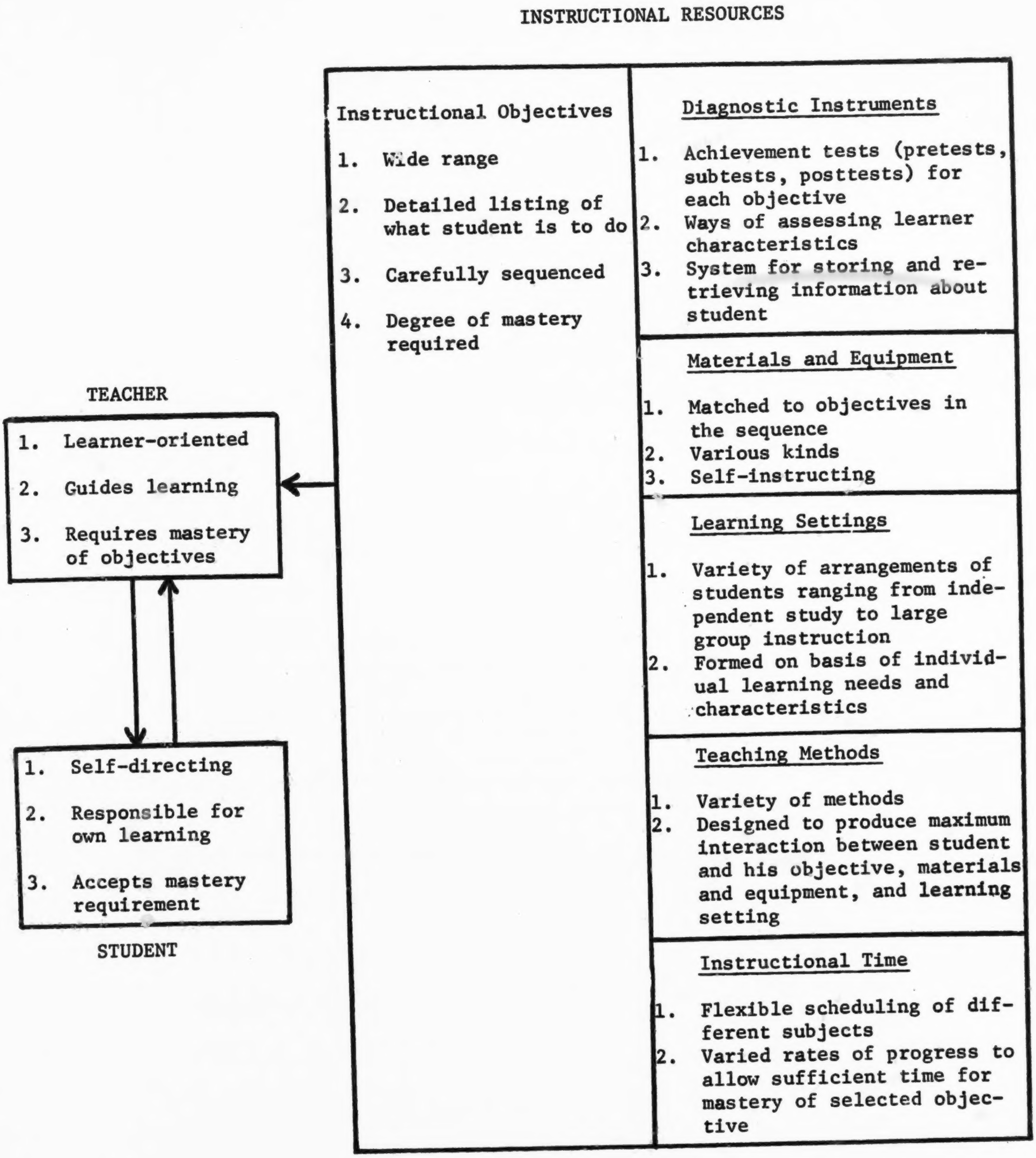
This brief description is familiar to teachers who have time and time again attempted and failed to individualize instruction for all students in a system geared to group instruction.

In order for a teacher to manage individualized instruction for every student in the class, the teacher-student working relationship and the instructional resources they will use must have special characteristics that help the teacher individualize instruction. Generally speaking, the teacher must be flexible and ready to adapt instruction to any individual learning need encountered in the classroom. Instructional resources must offer the teacher a wide range of choices and a variety of selections for individualizing the instruction of each student. The students themselves must work differently in such a program and interact in special ways with the teacher.

Figure 2 expands the description of the system of individualized instruction presented in Figure 1. Figure 2 adds the special characteristics that distinguish a system of individualized instruction from more conventional systems. Examine Figure 2 carefully in preparation for a small group discussion. The discussion will give you an opportunity to exchange ideas and information with some of the other teachers working through these materials. This exchange might include:

1. Any questions or topics you would like to discuss.
2. A discussion on the complementary roles of the teacher and student in individualized instruction.
3. A discussion on how the special characteristics of the instructional resources can help a teacher to individualize instruction. (You may wish to select one or two resources for detailed discussion or one characteristic of each resource for a broader discussion.)
4. Describe how you have individualized instruction by specifying how you worked with the student and what instructional resources you used.

Figure 2: Special Characteristics of a System of Individualized Instruction



INSTRUCTIONAL RESOURCES

Instructional Objectives

1. Wide range
2. Detailed listing of what student is to do
3. Carefully sequenced
4. Degree of mastery required

Diagnostic Instruments

1. Achievement tests (pretests, subtests, posttests) for each objective
2. Ways of assessing learner characteristics
3. System for storing and retrieving information about student

Materials and Equipment

1. Matched to objectives in the sequence
2. Various kinds
3. Self-instructing

Learning Settings

1. Variety of arrangements of students ranging from independent study to large group instruction
2. Formed on basis of individual learning needs and characteristics

Teaching Methods

1. Variety of methods
2. Designed to produce maximum interaction between student and his objective, materials and equipment, and learning setting

Instructional Time

1. Flexible scheduling of different subjects
2. Varied rates of progress to allow sufficient time for mastery of selected objective

TEACHER

1. Learner-oriented
2. Guides learning
3. Requires mastery of objectives

STUDENT

1. Self-directing
2. Responsible for own learning
3. Accepts mastery requirement

SMALL GROUP DISCUSSION

The Special Characteristics of a System of Individualized Instruction

1. Either start a sign-up sheet to form a small group of about six (6) teachers or add your name to one.

2. Participate in the group discussion as suggested as soon as a group of about six (6) teachers is formed. In the event you must wait for a group to form, continue working through these materials until a group is ready.

3. Use the rest of the page for any notes you may wish to make during the discussion.

POSTTEST: Section I: Overview of Individualized Instruction

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instruction materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Answer true or false:

1. In individualized instruction, a teacher provides for individual differences in order to bring the students to the point where they are more manageable in group discussion. ________

2. Individualized instruction uses the tutorial method almost exclusively. ________

3. Teacher works after school with a student in addition so he can keep up in class the next day. This is an example of group instruction. ________

4. Teacher gives a student a number line to help him with his difficulty in remembering number facts. This is an example of individualized instruction. ________

5. Two students work on an identical multiplication problem of the type both had failed on a diagnostic test. This is an example of group instruction. ________

6. A system of individualized instruction encourages the teacher to use a wide range and variety of materials. ________

7. Tutoring is the method most frequently used by teachers to individualize instruction. ________

8. Individual rates of progress allow each student to master his instructional objective. ________

9. In selecting materials and equipment the teacher chooses those items that are matched to the students instructional objective. ________

10. Both student and teacher work toward mastery of the instructional objective.

Complete:

1. A teacher plans an individualized program for a student based upon information about the student's:

    a. ____________________________
    b. ____________________________
    c. ____________________________

2. The six kinds of instructional resources used by a teacher to individualize instruction are:

    a. ____________________________
    b. ____________________________
    c. ____________________________
    d. ____________________________
    e. ____________________________
    f. ____________________________

ANSWER KEY

POSTTEST: Section I: Overview of Individualized Instruction

True-False:

1.	F	6.	T
2.	F	7.	F
3.	T	8.	T
4.	T	9.	T
5.	F	10.	T

Completion:

1. a. Mastery of instructional objective
   b. Learning needs
   c. Learner characteristics

2. a. Instructional objectives
   b. Diagnostic instruments
   c. Materials and equipment
   d. Learning settings
   e. Teaching methods
   f. Instructional times

HOW INSTRUCTION IS INDIVIDUALIZED

The teacher:

1. Describes how instruction is individualized:
    a. Names the component of instruction that is varied to individualize instruction.
    b. Lists and describes the six instructional resources that may be varied from student to student.
    c. Identifies instances of individualized instruction and the specific instructional resources being used to vary instruction.

2. Describes the steps taken in individualizing instruction:
    a. Names in order and explains each of the steps.
    b. Identifies the instructional resources and names the step in which they are used.
    c. Describes mastery requirement as a prerequisite to proceeding to next goal.

PRETEST: Section I: How Instruction is Individualized

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Select the instructional resource being varied in each statement. Write the letter of the correct answer in the blank on the right.

1. Two students are learning to read maps. One is working with programmed instruction while the other is watching a film on maps (a) diagnostic instruments (b) instructional settings (c) instructional material. ________

2. The teacher gives a lecture-demonstration to a group of students studying underwater life. (a) instructional time (b) instructional objectives (c) teaching method. ________

3. A student moving very rapidly through the math program is allowed to proceed unhindered. (a) instructional setting (b) instructional time (c) diagnostic instrument. ________

4. High school students are permitted to learn a foreign language of their choice. (a) instructional objectives (b) instructional method (c) instructional setting. ________

Select the step or steps taken in individualized instruction being described in each statement. Write the letter of the correct answer in the blank on the right.

5. Student works on program while teacher gives him guidance.
   (a) Implementing program
   (b) Mastery testing
   (c) Diagnosis of learning needs ________

6. Teacher diagnoses student progress and modifies student's program as needed.
   (a) Diagnosis of learning needs
   (b) Ongoing evaluation
   (c) Prescription of learning program________

7. Teacher varies materials and equipment.
   (a) Selection of instructional objective
   (b) Prescription of learning program
   (c) Ongoing evaluation ________

8. Teacher varies teaching methods.
   (a) Prescription of learning program
   (b) Mastery testing
   (c) Ongoing evaluation ________

ANSWER KEY

PRETEST: Section I; How Instruction is Individualized

1. c
2. b,c
3. b
4. a
5. a
6. b
7. b
8. a

HOW INSTRUCTION IS INDIVIDUALIZED

In individualizing instruction, the teacher starts with a particular student in mind and builds a learning program for him. In a class where instruction is individualized for all students, each student's program will differ from the others in one or more of the instructional resources assigned by the teacher. The teacher individualizes instruction by varying the instructional resources used from student to student according to each students individual needs.

In such a class, we will find students working towards mastery of different instructional objectives. The teacher will be using different diagnostic instruments for different students. The materials and equipment used will differ from student to student. Students will be working in different learning settings and different students will spend different amounts of time on a subject and work towards mastery of an objective at different rates.

The following statements are examples of how students' individual learning programs differ from one another in one or more of the following instructional resources:

1. Instructional objectives
2. Diagnostic instruments
3. Materials and equipment
4. Learning settings
5. Teaching methods
6. Instructional time

USE THE 5 X 8 CARD TO UNCOVER THE STATEMENTS. FILL IN THE BLANKS AT THE END OF EACH STATEMENT WITH AN APPROPRIATE NUMBER FROM THE LIST ABOVE TO INDICATE THE INSTRUCTION RESOURCE (S) BEING VARIED.

EXERCISE

1. High school students are permitted to learn a foreign language of their choice. ________

....

(1) Instructional objectives are varied by permitting different students to work in different subject areas.

****

2. Two students are learning to read maps. One is learning this with programmed instruction while the other learns map reading by watching a film. ________

....

(3) Different materials are used for different students working on the same instructional objective.

****

3. A student is given as much time as he needs to complete the assignment. ________

....

(6) Different students are paced through the curriculum at different rates.

****

4. The teacher gives a lecture-demonstration to a group of students studying underwater life as a special topic.

____

....

(4 & 5) Instructional objectives (study of underwater life) are different for this group of students and the teacher is employing a particular teaching method with them.

****

5. Students are given a spelling pretest. ________

....

(2) A diagnostic instrument is used to discover students' achievement is spelling before it is taught.

****

6. A few bright students begin independent study of marine biology. ________

....

(1 & 4) Instructional objectives (marine biology) and a particular learning setting are selected based on students' abilities.

****

7. The teacher uses the questioning technique to get a quiet student to respond. ________

....

(5) Teacher is selecting a teaching method for a student with a particular characteristic.

****

8. In a unit of Canada different students are required to do particular kinds of reporting on various aspects of the country.

....

(1) Instructional objectives are being differentiated in terms of the kinds of reporting students do and the subject matter they cover.

****

9. A teacher uses a checklist to record her observations of some students reading orally. ________

....

(2) Diagnostic instrument is used to record student behavior.

****

10. A student moving very rapidly through the math program is allowed to proceed unhindered. ________

....

(6) Individual student is allowed to work at his own rate of progress.

****

11. Students have been assigned multi-level texts in science to match their reading levels. ________

....

(3) Material is chosen based on students' reading abilities.

****

12. A student learning to plot simple line graphs is given graph paper, pencils and rulers. ________

....

(3) Materials are selected for facilitating the learning of a skill by an individual student.

****

13. A teacher assigns students to pupil-teams, peer-tutoring and small group instruction in running her spelling program. ________

....

(4) Learning settings are varied in carrying out the program. ________

****

14. Teacher-pupil planning is found to be a successful way in developing a new topic in Civics. ________

....

(5) Teaching method is used to develop lesson.

****

15. Sometimes students are taught in a whole class or in a large group of more than one class. ________

....

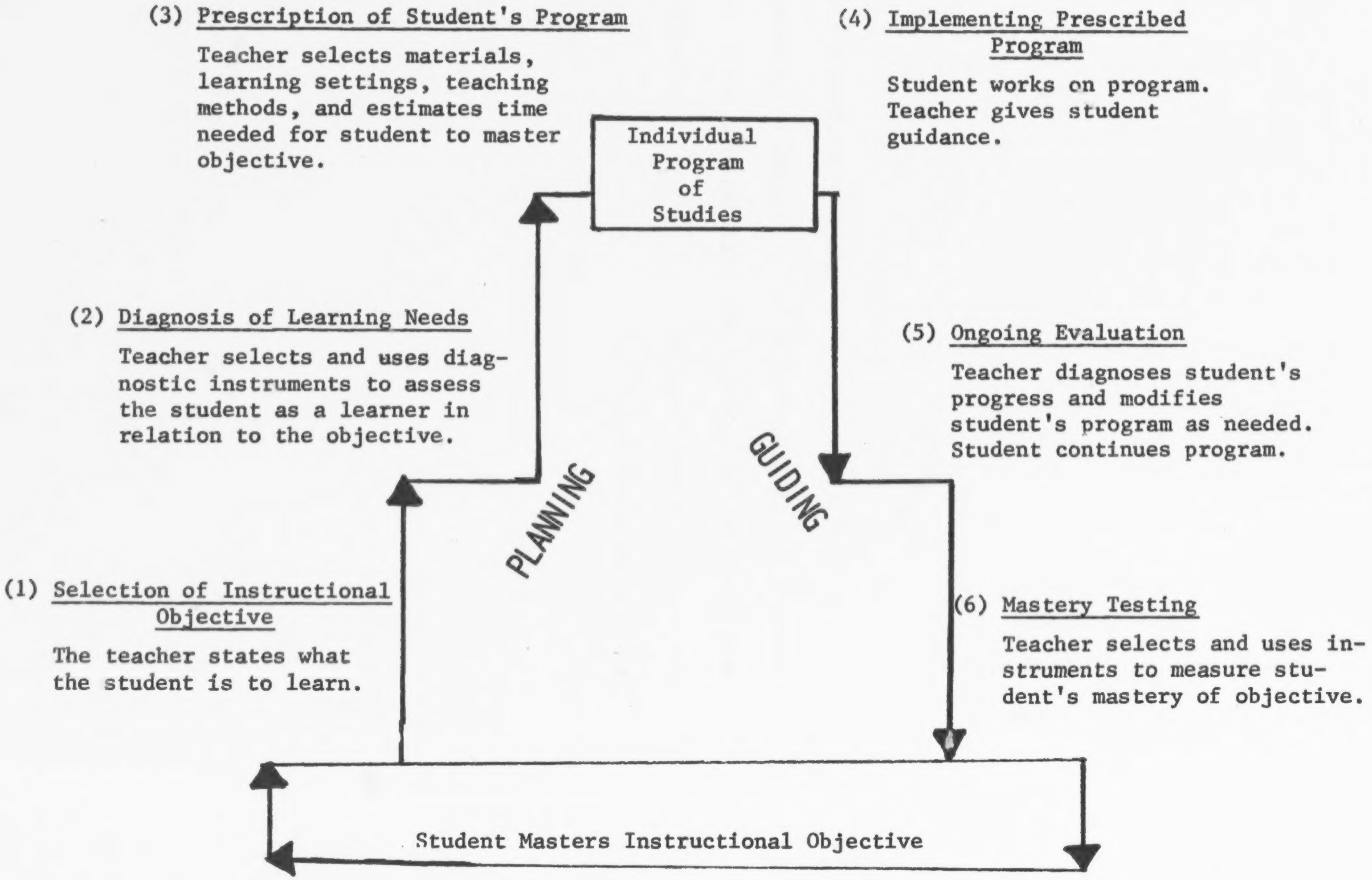
(4) Learning setting is varied at different times.

****

END OF EXERCISE

In creating an individual program of studies for a student, the teacher proceeds systematically in selecting and assigning the appropriate instructional resources. The steps that are followed are represented in Figure 3 and are explained below.

Figure 3: Steps in Individualizing Instruction



(1) Selection of Instructional Objective

The teacher states what the student is to learn.

(2) Diagnosis of Learning Needs

Teacher selects and uses diagnostic instruments to assess the student as a learner in relation to the objective.

(3) Prescription of Student's Program

Teacher selects materials, learning settings, teaching methods, and estimates time needed for student to master objective.

(4) Implementing Prescribed Program

Student works on program. Teacher gives student guidance.

(5) Ongoing Evaluation

Teacher diagnoses student's progress and modifies student's program as needed. Student continues program.

(6) Mastery Testing

Teacher selects and uses instruments to measure student's mastery of objective.

Individual Program of Studies
PLANNING
GUIDING
Student Masters Instructional Objective

Step 1. Selection of Instructional Objective

The teacher begins planning by stating the instructional objective selected for a student. The objective may be the acquisition of a mathematics skill, the mastery of a set of scientific facts, the development of a social skill, etc. Whatever the objective may be, it is selected on the basis of what the student needs to learn next.

Step 2. Diagnosis of Learning Needs

Before instruction begins, the teacher pretests the student on the objective to determine what he knows and does not know. In addition, the teacher gathers relevant information about the student's past performance and background. This gives the teacher a set of data upon which to build the student's program. These data are obtained from pencil, and paper tests, performance tests, checklists, informal inventories, standardized tests, cumulative records, etc.

Step 3. Prescription of Student's Program

This is the last phase of pre-instructional planning. The teacher reviews all the instructional resources available and prescribes the resources that will help the student master the instructional objective. At the end of this step, the initial design of an individual program of studies for the student is completed.

Step 4. Implementing Prescribed Program

At this point, both teacher and student carry out the program of studies as designed. The student uses the prescribed instructional resources and works towards mastery of the objective while the teacher guides him in following the program. This step is concerned with implementing the program as initially conceived by the teacher and is very closely related to Step 5.

Step 5. Ongoing Evaluation

As the student is working through his program of studies, his performance provides the teacher with data about its effectiveness. The teacher uses work products and the behaviors that the student exhibits as he works in the program as additional diagnostic data. These data tell the teacher whether or not the student is making progress towards mastery, and suggest reasons for progress or lack of progress. Based on this, the teacher may modify the student's program by repeating some or all of the pre-instructional activities of Steps 2 and 3 (Diagnosis and Prescription). The cycle of ongoing evaluation, re-diagnosis, re-presciption, and implementation is continued until the teacher judges the student is ready to be tested for mastery of the objective.

Step 6. Mastery Testing

Once the teacher has concrete evidence from the ongoing evaluation that the student has mastered his instructional objective and she can predict a high probability of success on a mastery test, the teacher selects an appropriate mastery test and assigns it to the student.

If the student's test performance indicates mastery of the objective, he is recycled to start a new program of studies. The teacher starts with Step 1 again. In the event the student does not meet the mastery criterion, his test performance is used as additional diagnostic data and the teacher recycles his program through all or part of Steps 2, 3, 4 and 5.

SMALL GROUP DISCUSSION

Steps in Individualizing Instruction

Preparation:

1. Select a student currently or recently enrolled in your class.
2. Plan and describe briefly an individual program of studies for this student by following the Steps 1-3 in individualizing instruction outlined on the preceding pages. (It will be necessary to simulate data in Step 2).
   Assume that all the instructional resources you need are available.
3. Either start a sign-up sheet to form a small group of about 4 - 6 teachers or add your name to one.
4. Join the group when it is formed.

Discussion:

1. Present and discuss the program created by the teachers in the group.
2. Project how the student would work in Steps 4 - 6 and describe some of the modifications you would make.
3. Include any questions or topics on individualizing instruction you may wish to discuss.

Up to this point, individualized instruction has been presented as an instructional system designed to create a learning environment suited to the individual learner's needs and characteristics. The discussion has described the framework within which a teacher can individualize instruction and has outlined the steps to be taken.

As important as the orientation to individualized instruction is, it falls far short of what the classroom teacher needs to individualize instruction for all the students in her classroom. The teacher needs a complete set of fully-developed instructional resources to individualize instruction.

At the present time, Individually Prescribed Instruction (IPI) provides the teacher with a specific system of individualized instruction that can help to increase the individualization of instruction for all students. The materials that follow will describe IPI as a specific system of individualized instruction.

POSTTEST: Section I: How Instruction is Individualized

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Select the instructional resource being varied in each statement. Write the letter of the correct answer in the blank on the right.

1. Two students are learning to read maps. One is programmed instruction while the other is watching a film on maps (a) diagnostic instruments (b) instructional settings (c) instructional material ______

2. The teacher gives a lecture-demonstration to a group of students studying underwater life. (a) instructional time (b) instructional objectives (c) teaching method ______

3. A student moving very rapidly through the math program is allowed to proceed unhindered. (a)instructional setting (b) instructional time (c) diagnostic instrument ______

4. High school students are permitted to learn a foreign language of their choice. (a) instructional objectives (b) instructional method (c) instructional setting ______

Select the step or steps taken in individualized instruction being described in each statement. Write the letter of the correct answer in the blank on the right.

5. Student works on program while teacher gives him guidance.
   (a) Implementing program
   (b) Mastery testing
   (c) Diagnosis of learning needs ______

6. Teacher diagnoses student progress and modifies student's program as needed.
   (a) Diagnosis of learning needs
   (b) Ongoing evaluation
   (c) Prescription of learning program ______

7. Teacher varies materials and equipment.
   (a) Selection of instructional objective
   (b) Prescription of learning program
   (c) Ongoing evaluation ______

8. Teacher varies teaching methods.
   (a) Prescription of learning Program
   (b) Mastery testing
   (c) Ongoing evaluation ______

ANSWER KEY

POSTTEST: Section I: How Instruction is Individualized

1. c
2. b,c
3. b
4. a
5. a
6. b
7. b
8. a

OVERVIEW OF IPI

The teacher defines IPI as a specific system of individualized instruction:

a. Names the major components and explains how they work together.

b. Discriminates between instances of individualized instruction using IPI resources and non-IPI resources.

c. Describes the required characteristics of each component.

PRETEST: Section I: Overview of IPI

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Complete:

1. The two types of diagnostic instruments specified by the IPI system are:
(a)__________
(b)__________

2. The aide in IPI carries out three main functions. These are:
(a)__________
(b)__________
(c)__________

3. Two resources in IPI are not specified. These are:
(a)__________
(b)__________

4. Instructional objectives in IPI are specified as: (a)__________

5. In IPI, a student works on his: (a)__________

6. In IPI, instructional time is specified as: (a)__________

7. The material most used in IPI consists of: (a)__________

8. Individually Prescribed Instruction is a ________ system of individualized instruction. (a)__________

9. In IPI, skill objectives are correlated with: (a)__________
(b)__________

10. As in the generalized program of individualized instruction, in IPI each student is provided with a program suited to his:
(a)__________
(b)__________

Answer true or false:

1. An IPI teacher constructs her own pretests. __________

2. An IPI teacher uses materials correlated with behavioral objectives. __________

3. Student in IPI spends different amounts of time working on mathematics each day. __________

4. Student in IPI must complete math prescription at end of each math class. __________

ANSWER KEY

PRETEST: Section I: Overview of IPI

Completion:

1. a. IPI achievement tests
   b. IPI record system

2. a. scores work
   b. maintains record system
   c. maintains materials center

3. a. teaching techniques
   b. instructional time

4. math skill objectives

5. individual prescription

6. pacing

7. skill worksheets

8. specific

9. a. diagnostic instruments
   b. skill worksheets

10. a. learning needs
    b. characteristics

True-False:

1. F

2. T

3. F

4. F

Audio Tape #1: Dr. Robert Scanlon, The History of IPI. Reasearch for Better Schools, Inc. (Philadelphia, Pa.) 1967.

DIRECTIONS: Listen to Audio-Tape #1. You may do this at any point of your work in this section.

Individually Prescribed Instruction is a specific system of individualized instruction. In IPI, teachers use a set of behavioral objectives correlated with diagnostic instruments and curriculum materials, teaching techniques and instructional time that are designed:

1. To enable each pupil to work at his own rate through units of study in a learning sequence.
2. To develop in each pupil a demonstrable degree of mastery.
3. To develop self-initiation and self-direction of learning.
4. To foster the development of problem-solving thought processes.
5. To encourage self-evaluation and motivation for learning.

IPI as a specific system of individualized instruction is very similar to our general model of individualized instruction (Figure 1). Firgure 4 represents a system of IPI with its special vocabulary and resources engineered for IPI. Study Figure 4 carefully to learn about IPI vocabulary and IPI resources.

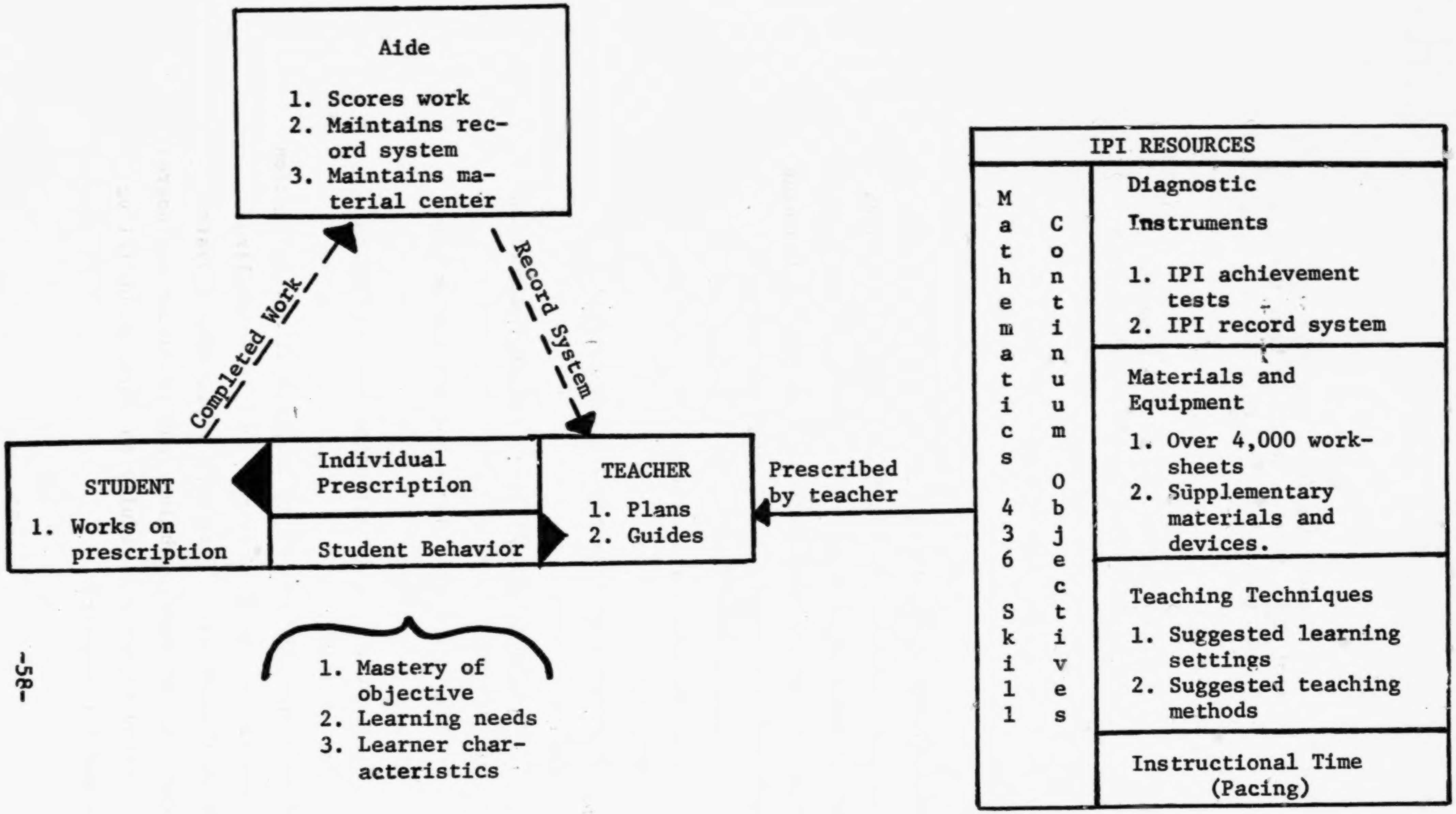

Aide
1. Scores work
2. Maintains record system
3. Maintains material center
Completed Work
Record System
STUDENT
1. Works on prescription
Individual Prescription
Student Behavior
TEACHER
1. Plans
2. Guides
1. Mastery of objective
2. Learning needs
3. Learner characteristics
Prescribed by teacher
IPI RESOURCES
Mathematics 436 Skill
Continuum Objectives
Diagnostic Instruments
1. IPI achievement tests
2. IPI record system
Materials and Equipment
1. Over 4,000 worksheets
2. Supplementary materials and devices.
Teaching Techniques
1. Suggested learning settings
2. Suggested teaching methods
Instructional Time (Pacing)

Figure 4: The System of Individually Prescribed Instruction

EXERCISE

Compare Figure 4: The System of Individually Prescribed Instruction to Figure 2: A System of Individualized Instruction to note their similarities and differences.

There are six elements which distinguish Individually Prescribed Instruction from conventional elementary school procedures:

First : detailed specifications of educational objectives;

Second : organization of methods and materials to attain these objectives;

Third : careful determination of each pupil's present competence in a given subject;

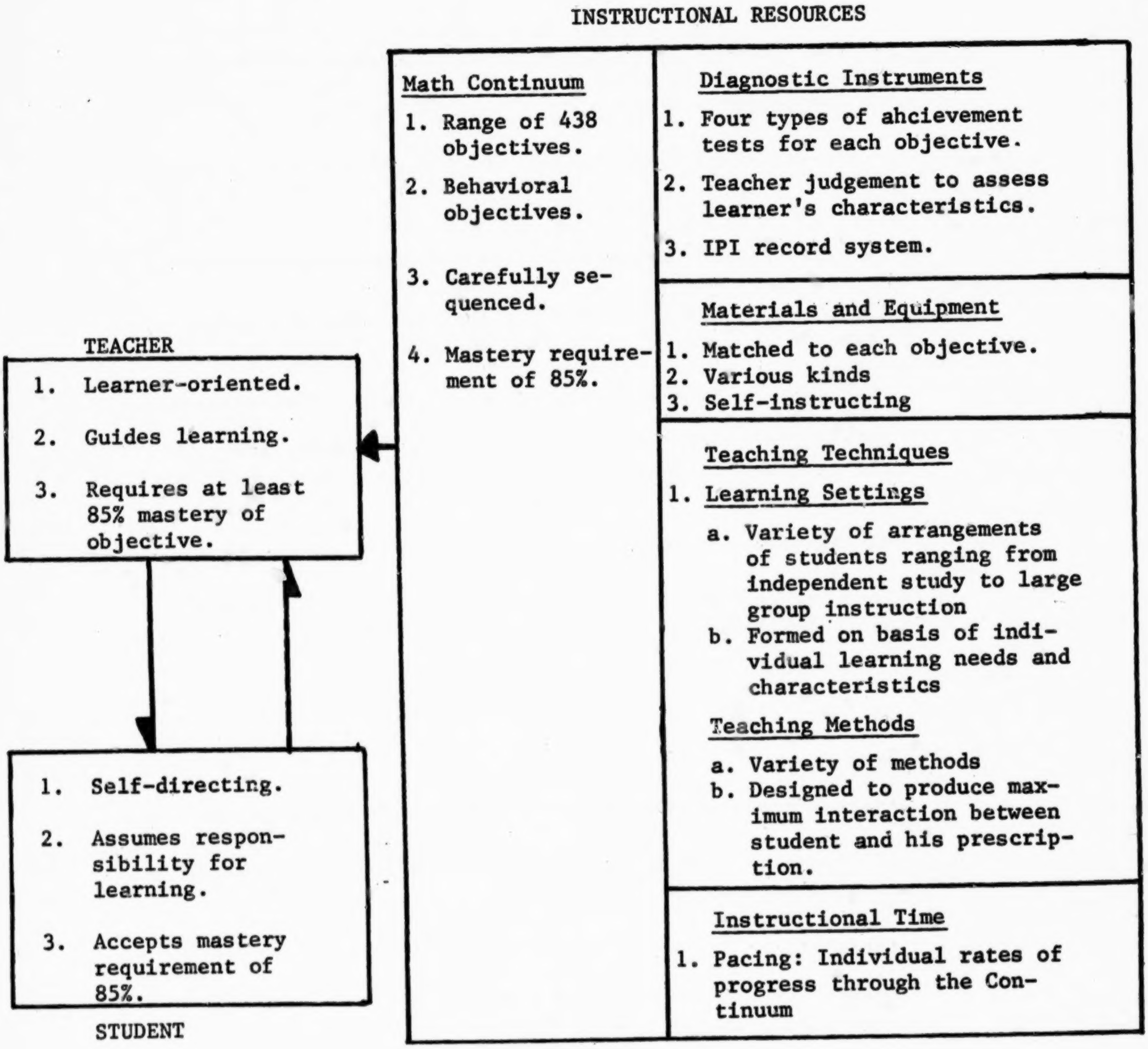
Fourth : individual daily evaluation and guidance of each pupil;

Fifth : provision for frequent monitoring of student performance, in order to inform both the pupil and the teacher of progress toward an objective;

Sixth : continual evaluation and strenghtening of the curriculum and instructional procedures.

They are represented in Figure 5 which expands the description of IPI to include its special characteristics. Figure 5 is similar to Figure 2. Use the following exercise to help you compare them.

Figure 5: Special Characteristics of IPI



INSTRUCTIONAL RESOURCES

Math Continuum

1. Range of 438 objectives.
2. Behavioral objectives.
3. Carefully sequenced.
4. Mastery requirement of 85%.

Diagnostic Instruments

1. Four types of ahcievement tests for each objective.
2. Teacher judgement to assess learner's characteristics.
3. IPI record system.

Materials and Equipment

1. Matched to each objective.
2. Various kinds
3. Self-instructing

Teaching Techniques

1. Learning Settings
   a. Variety of arrangements of students ranging from independent study to large group instruction
   b. Formed on basis of individual learning needs and characteristics

Teaching Methods

a. Variety of methods
b. Designed to produce maximum interaction between student and his prescription.

Instructional Time

1. Pacing: Individual rates of progress through the Continuum

TEACHER

1. Learner-oriented.
2. Guides learning.
3. Requires at least 85% mastery of objective.

STUDENT

1. Self-directing.
2. Assumes responsibility for learning.
3. Accepts mastery requirement of 85%.

THE FOLLOWING STATEMENTS WILL HELP YOU COMPARE FIGURES 2 AND 5 AND SPECIFY HOW IPI HAS BEEN ENGINEERED TO INDIVIDUALIZE INSTRUCTION. USE THE 5 X 8 CARD TO UNCOVER THE ITEMS. ANSWER BY FILLING IN TRUE OR FALSE.

EXERCISE

1. Of the three major parts of each figure, the student component and the teacher component are identical in both Figures 2 and 5.__________

....

True. Check Figures 2 and 5.

****

2. All the basic requirements for instructional objectives have not been met by the IPI Mathematics Continuum._____

....

False. Inspection of Figures 2 and 5 indicates that the IPI Mathematics Continuum has met all four basic requirements for instructional objectives.

****

3. Teaching techniques used in IPI meet all basic requirements for learning settings and methods set in Figure 2._______

....

True.

****

4. IPI requires that instructional time allow for flexible scheduling and pacing. _______

....

False. Figure 5 shows that pacing is the only way IPI uses instructional time.

****

END OF EXERCISE

POSTEST: SectionI: Overview of IPI

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Complete:

1. The two types of diagnostic instruments specified by the IPI system are: (a)__________

   (b)__________

2. The aide in IPI carries out three main functions. These are: (a)__________

   (b)__________

   (c)__________

3. Two resources in IPI are not specified. These are: (a)__________

   (b)__________

4. Instructional objectives in IPI are specified as: (a)__________

5. In IPI, a student works on his: (a)__________

6. In IPI, instructional time is specified as: (a)__________

7. The material most used in IPI consists of: (a)__________

8. Individually Prescribed Instruction is a________ system of individualized instruction. (a)__________

9. In IPI, skill objectives are correlated with: (a)__________

   (b)__________

10. As in the generalized program of individualized instruction, in IPI each student is provided with a program suited to his: (a)__________

    (b)__________

Answer true or false:

1. An IPI teacher constructs her own pretests. ________

2. An IPI teacher uses materials correlated with behavior objectives. ________

3. Student in IPI spends different amounts of time working on mathematics each day. ________

4. Student in IPI must complete math prescription at end of each math class. ________

ANSWER KEY

POSTTEST: Section I: Overview of IPI

Completion:

1. a. IPI achievement tests
   b. IPI record system

2. a. scores work
   b. maintains record system
   c. maintains materials center

3. a. teaching techniques
   b. instructional time

4. math skill objectives

5. individual prescription

6. pacing

7. skill worksheets

8. specific

9. a. diagnostic instruments
   b. skill worksheets

10. a. learning needs
    b. characteristics

True-False

1. F

2. T

3. F

4. F

HOW INSTRUCTION IS INDIVIDUALIZED IN IPI

The teacher:

1. Describes how instruction is individualized in IPI:
    a. Names the IPI component of the system that is varied.
    b. Lists and describes the 5 instructional resources that may be varied from student to student in IPI.
    c. Identifies instances of IPI and the specific instructional resource used to vary instruction.
2. Describes the steps taken to individualize instruction in IPI:
    a. Names in order and explains each of the steps.
    b. Identifies the instructional resources and names the step in which they are used.
    c. Describes the mastery requirement in IPI.

PRETEST: Section I: How Instruction Is Individualized in IPI

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Select the IPI resource varied in each statement. Write the letter of the correct answer in the blank on the right.

1. Teacher prescribes one third-grader the skill, C-Frac.-2, and another D-Num.-1 (a) Objectives (b) Achievement tests (c) Teaching techniques ____________

2. Student is prescribed an abacus to help him master a skill in B-Num. (a) Instructional time (b) Materials and equipment (c) Objectives ____________

3. Teacher prescribes a curriculum embedded test to assess student's mastery of skill 3 in D-COP (a) Teaching Techniques (b) Materials (c) Achievement tests. ____________

Select the step taken in IPI described in each statement. Write the letter of the correct answer in the blank on the right.

4. Teacher uses curriculum embedded test to diagnose student's progress (a) mastery testing (b) diagnosing of learning needs (c) Ongoing evaluation. ____________

5. Teacher specifies skills to be mastered (a) Diagnosis of learning needs (b) Ongoing evaluation (c) Writing prescription. ____________

The statements below describe one of the following:

a. IPI
b. Generalized system of Individualization
c. Both

Select the correct answer and place the letter in the blank on the right.

6. Mastery requirements of 85%. ____________

7. Flexible scheduling. ____________

8. Learning goals are carefully sequenced. ____________

9. Variety of arrangements of learning settings. ____________

10. Teacher judgment used to assess learning characteristics ____________

ANSWER KEY

PRETEST: Section I: How Instruction is Individualized in IPI

1. a
2. b
3. c
4. c
5. c
6. a
7. b
8. c
9. c
10. a

HOW INSTRUCTION IS INDIVIDUALIZED

Instruction in IPI mathematics is individualized by varying:

1. IPI objectives from student to student;
2. IPI achievement tests from student to student;
3. IPI materials and equipment from student to student;
4. Teaching techniques from student to student;
5. Instructional time from student to student.

This IPI strategy is identical to the general strategy of individualized instruction. However, the specifics of the IPI strategy provide the teacher with:

1. An IPI Mathematics Continuum;
2. IPI achievement tests keyed to the Continuum;
3. IPI materials and equipment keyed to the Continuum;
4. IPI record system.

Though teaching techniques and instructional time are used to differentiate instruction in IPI, no IPI products in these areas have been developed yet. In IPI the teacher is expected to vary teaching techniques and instructional time based upon her judgment of student performance.

The following materials (Booklet I) will serve as a brief introduction to the way IPI resources are correlated to individualize instruction. Follow the directions on Booklet I.

Use this exercise with the materials in Level C, page 75.

THE FOLLOWING INSTRUCTIONS WILL HELP YOU LOCATE AN INSTRUCTIONAL OBJECTIVE IN THE IPI MATHEMATICS CONTINUUM AND TO RELATE IT TO SAMPLES OF IPI RESOURCES. USE THE 5 X 8 CARD TO UNCOVER THE ITEMS. FILL IN THE BLANKS.

1. Find the mathematics unit that is boxed in. This unit is called NUMERATION - Level ____________.

....

Level C

****

2. Find the first objective that is underlined. Objective 1 requires that the student read and write numerals 1-200 in ______________________________.

....

Sequence from any starting point.

****

3. Locate PRETEST: SAMPLE ITEMS. The underlined words indicate that these items measure achievement of ____________________ and ____________________.

....

C-Numeration; Objective 1.

****

4. Inspect the sample items from the pretest. Do they ask the student to write numerals 1-200 in sequence from any starting point?_________________________.

....

Yes. The items ask the student to write numerals in the sequence of 129-200.

****

5. Compare the items with C-Numeration - Objective 1. Are the items related to the objectives?__________

....

Yes. All IPI tests are keyed to IPI instructional objectives.

****

6. Locate SAMPLE WORKSHEET. Do the items ask the student to practice writing numerals 1-200 in sequence from any starting point?_________________________

....

Yes. The student is asked to practice writing the sequences: 116-125; 96-105; 191-200.

****

7. Compare the worksheet items to the pretest items and C-Numeration-Objective 1. Are they all concerned with reading and writing numerals 1-200 in sequences from any starting point?______________

....

Yes. All IPI objectives, tests and worksheets are related.

****

8. When an IPI teacher selects a mathematics objective for a student, the teacher has many related (a)______________________ and (b)______________________________ to choose from.

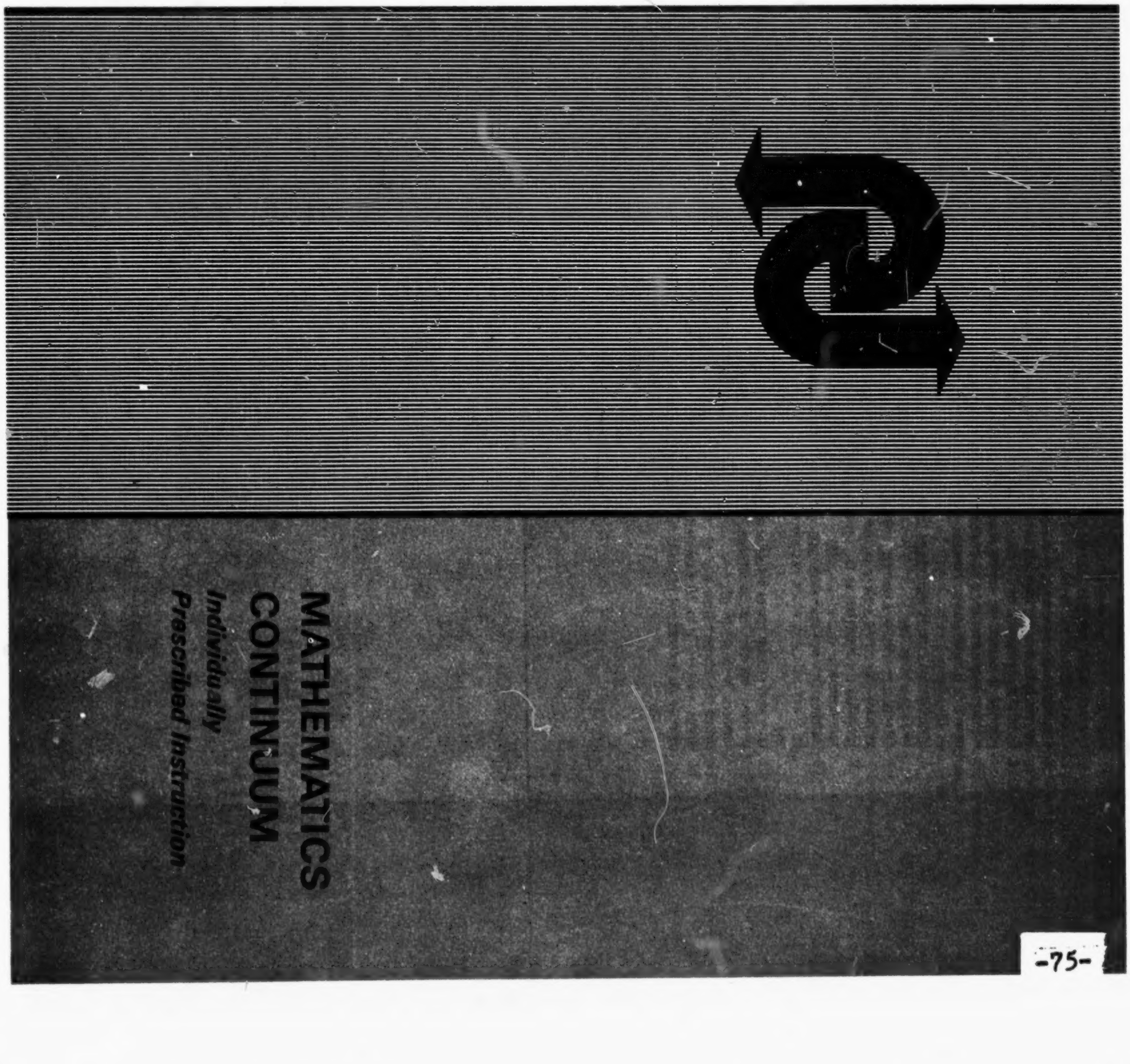
....

(a-b): tests, worksheets

****

END OF INSTRUCTIONS

BOOKLET I



MATHEMATICS
CONTINUUM
Individually
Prescribed Instruction

	level A	level B	level C	level D
UMERATION	1. Identifies same, different; top, bottom; smaller, larger; smallest, largest. 2. Counts orally from 1 to 10. 3. Presented with numbers 1 to 10 in order, reads them orally from left to right. 4. Counts orally from 1 to 10 objects by pointing to object and saying number. 5. Matches two equivalent sets of objects in a 1 to 1 relationship. Matches sets to 10. 6. Identifies the cardinal numbers of structured groups to 10. 7. Selects or constructs a set that contains as many objects as a given number. 8. Identifies the empty set or the set with zero members. 9. Matches two non-equivalent sets of 1 to 1 and indicates which has more or less. 10. Tells what number comes before or after a given number, or in-between two numbers. Numbers to 10. 11. Writes the numbers from 1 to 10. 12. Writes numbers 1 to 10 from left to right on an ordered set of pictures.	1. Given number words for numbers zero to ten, reads words orally and matches words with numerals or structured groups. 2. Counts orally by 10's to 100 starting with tens only. 3. Counts orally by 1's to 100 in short sequences. 4. Presented with an ordered arrangement of numerals, 0 to 100, reads them on request from any starting point. 5. Writes numerals from 1 to 100 in sequential order or on an ordered set of pictures for small blocks of numbers. 6. States, selects or writes the cardinal number of a structured group to 100. 7. Identifies what number comes after a given number, between two numbers, or before any given number for numbers to 100, with or without structured groups. 8. Selects which of two (or three) numbers is greater (greatest), smaller (smallest) for numbers to 100. 9. Places > or < between two numbers to indicate the greater or lesser with or without structured groups; to 100. 10. Places an X on the object with the specified ordinal position to "tenth."	1. Reads and writes short sequences of numbers from any starting point to 200. 2. Reads or writes short sequences of numbers from any starting point to 200. 3. Supplies the number which is one more, one less, or in-between two given numbers. Limit of 200. 4. Completes exercises for counting by 10's from any starting point. Limit of 200. 5. Completes exercises for counting by 5's from 0 to 200 starting at multiples of 5. 6. Completes exercises for counting by 2's from any starting point to 200. Identifies number as odd or even. 7. Completes mixed exercises for counting by 10's, 5's, or 2's. Limit of 200; starting only with multiples of the index number.	1. Reads & writes numbers to 1000. Reads & writes short sequences backward or forward. 2. Skip counts by 3's to 1000 backward or forward. 3. Skip counts by 4's to 1000 backward or forward. 4. Converts decimals to fractions & words. Vice versa. Fills in number line. Tenths. 5. Converts decimals to fractions & words. Vice versa. Hundreths.
PLACE VALUE		1. Writes the numeral which names a structured group of up to 100 objects as ___ tens and ___ ones. 2. Selects a structured group to match a given number. Numbers to 99. 3. Writes the digit which is in the 10's or 1's place as requested for a given number. States the place value of a particular digit.	1. Writes the cardinal number for structured decimal groups to 200. 2. Places > or < between two numbers to show which is the greater or lesser. Numbers to 200. 3. Writes a given number as ___ hundreds, ___ tens and ___ ones and in expanded notation using the + sign. Numbers to 200. 4. Writes the digit which is in the unit's, ten's, or hundred's place as requested for numbers to 200. States the place value of a particular digit. 5. Writes numbers to 200 in columns for hundreds, tens, and units according to the place value of each digit.	1. Identifies place value of 1's, 10's, 100's, 1000's in words or numbers. 2. Uses >, < to 1000. 3. Writes number before or after a given number or between 2 numbers to 1000. 4. Writes numbers in expanded notation. To 1000. 5. Regroups, renames numbers for borrowing/carrying. 6. Add & subt. problems related by multiples of 10. 7. Writes decimals in expanded notation. Words, fractions, decimals. 8. Identifies place value of decimals, words, fractions, decimals. To hundredths. 9. Place value chart. Decimals. To hundredths.

level E	level F	level G	level H	level I
1. Counts, reads, writes to 1,000,000, any starting point. 2. Identifies odd-even numbers. States, uses rules for addition, subtraction, multiplication 2 numbers. 3. Rounds numbers to 10's, 100's, for comparison and estimating answers in sample word problems. 4. Gives numeral for 2, 3, 4 place number written in words, writes 2, 3, 4 place number in words. 5. Writes decimal fractions for common or mixed fractions of 10 or 100 denominator — vice versa. 6. Number words for mixed decimals to 1000ths. Vice versa. 7. Converts decimal fractions (to thousandths to other forms). 8. Orders mixed & pure decimals. To 100.-.001. [illegible]	1. Rounds numbers to nearest thousands, ten thousands, millions, for estimating answers. 2. Writes numerals for a 5, 6, or more place number, writes words. 3. Locates prime numbers to 100 on a chart.	1. Tests any number to determine if it is prime or composite. 2. Finds prime factors of given #. 3. Identifies numbers possible in base 5. Multiple choice questions about characteristics. 4. Writes base 5 numbers in expanded base 5 and 10. 5. Converts base 10 number to base 5. Vice versa. 6. Locates, writes negative numbers on number line, thermometer. 7. Illustrates use of negative numbers. 8. Writes numbers in scientific or other exponential notation. Positive powers.	1. Identifies numbers in base, 3, & 8. Changes numbers to base 10 and vice versa. 2. Adds and subtracts 1 & 2 digit numbers in base 2, 3 & 8 using expanded notation. 3. Adds and subtracts 1 & 2 digit numbers in base 2, 3, & 8 without expanded notation. 4. Identifies and uses the commutative principle for adding one and two digit numbers in base 5. 5. Identifies and uses the associative principle for adding more than 2 numbers (1 and 2 digits) in base 5. 6. Solves 1-step word problems which require adding and subtracting 1 and 2 digit base 5 numbers.	1. Identifies which numbers can appear in a base three, six, or seven system; writes numbers in the base in expanded notation; changes numbers written in base ten notation to numbers in this system and vice versa. 2. Adds and subtracts with one and two digit numbers using expanded notation in base three, six, or seven. 3. Adds and subtracts one and two digit numbers without using expanded notation in bases three, six, or seven. 4. Identifies and uses the commutative principle for adding one and two digit numbers in base three, six, or seven. 5. Identifies and uses the associative principle for adding one and two numbers of one or two digits in base three, six, or seven. 6. Solves one-step word problems which require adding and subtracting one and two digits in base three, six, or seven. 7. Uses repeated addition to solve multiplication problems in base three, five, six, or seven. 8. Solves multiplication problems with a number line for numbers in base three, five, six, or seven. 9. Completes a multiplication matrix for basic facts in base three, five, six, or seven. 10. Does multiplication of a one digit factor times a one or two digit factor for base three, five, six, or seven (may refer to above multiplication matrix).
1. Identifies place value digits to 1,000,000. 2. Writes numbers to 1,000,000 in expanded notation, words/numbers "+" signs. Place value chart. 3. Uses > or < to 1,000,000. 4. Uses multiples of 10 to generalize multiplication and division facts. Uses factors to 5x10. 5. Identifies place value of mixed decimals to 1000ths. 6. Writes decimal as whole number plus sum of decimal part to thousandths place. 7. Place value chart for mixed decimals to 1000.001. PLACE VALUE	1. Place value chart for 4 + digit #'s. 2. Writes 10 as a power. Identifies the base and exponent or power of a term. 3. Writes number with 1 non-zero digit as a whole number < 10 times a power of 10, i.e., $7x10^3$. 4. Writes a number, 1 thru 9 multiplied by itself a number times in exponential form. 5. Reads and charts decimal numbers to millionths.	1. Makes place value charts in base 5 and 10 to compare systems. 2. Makes decimal place value chart with positive exponents. Fractions instead of negative exponents. Limit 10^9.	1. Makes place value chart in base 2, 3 & 8 for comparison with base 10.	

level I continued on page 5

	level A	level B	level C	level D
ADDITION	1. Associates objects in a 1 to 1 relationship. Equivalent-non equivalent groups. 2. Manipulates objects to illustrate add. subt. facts through 6. 3. Circles number to identify how many objects are in each of two sets and in both sets together.	1. Writes the number of objects in each of 2 sets and the number of objects when put together. Sums to 12. 2. Circles or fills in the correct numerals for pictured addition statements. Circles or fills in numerals for pictured subtraction statements. Sums to 12. 3. Uses the word when given the symbol and the symbol when given the word for +, −, =. Circles numerals which indicate sum or addends in a number sentence. 4. Fills in numbers (missing sums and/or addends) to make "true number sentences" for pictured addition and subtraction situations. 5. Finds the sums and differences for addition and subtraction statements with "+" and "−" signs. 6. Selects "other names for numbers" by matching addition or subtraction expressions (N+M) or (N−M) with pictured groups or numerals to 12. 7. Writes = or ≠ sign to identify true or not true addition or subtraction statements. Creates true number sentences by correcting incorrect sentences, changing only one number. Sums to 12. 8. Given an addition equation, writes or completes a second equation to illustrate the **commutative** principle for addition. Sums to 12. 9. Completes addition and subtraction sentences with missing sums (differences) or addends associated with familiar number families. Sums to 12. 10. Solves or completes 1 step word problems with pictures. Sums to 12.	1. Does column addition with two addends for any two or three digit numbers, no carrying. Checks addition problems by adding in reverse direction. 2. Solves column addition problems with three or more addends and sums to 20. 3. Places >, <, or = between two addition expressions to show their relationship. Sums to 18. 4. Adds three single digit numbers in two different ways to illustrate the **associative** principle for addition. Puts in parentheses to show which numbers are added first. Sums to 12. 5. Adds two numbers to sums of 20 using expanded notation.	1. Mastery sums thru 20. Timed test. 2. Column addition 2 addends, 3 + digits. No carrying. 3. Finds missing addends. 3 single digits. Sums thru 20. 4. Uses words sum, addend — labels part. 5. Adds carrying to 10's using 2 digit numerals, 2 or more addends. To 200. 6. Adds, carrying to 10's/100's, using 3 digit numerals, 2 or more addends. To 2000. 7. Adds, carry 10's, 100's using 3 digit numerals, 2 or more addends. To 2000. 8. Finds sums, column addition. Using 3 or more addends of 1 digit. To 50.
SUBTRACTION	(Combined with Addition—Level A, see above)	(See addition Nos. 1, 2, 3, 4, 5, 6, 7, 9 and 10—Level B, see above)	1. Subt. problems — sums to 18. 2. Subt. 2 digits — no borrowing. 3. Finds missing addend — 2 single digits. 4. Uses >, <, or = between subtraction expressions. Sums to 18.	1. Mastery subtraction facts, numbers to 20. 2. Subtraction no borrowing — 3 or more digits. 3. Subtraction borrowing 10's place — 2 digits. 4. Subtraction borrowing 10's, or 100's — 3 digits. 5. Subtraction borrowing 10's, and 100's — 3 digits.

level E

1. Column addition, no carrying, 3 or more digit numbers, more than 2 addends.
2. Uses commutative principle of addition.
3. Uses associative principle for addition to add 2 or more place numerals.
4. Adds with carrying for 4 or more place numerals with 2 addends.
5. Adds 2 mixed numbers to thousands (whole no.'s) and hundredths (decimals).
6. Solves multiple-step word problems.

ADDITION

1. Subtraction with borrowing, 4 or more place numbers.
2. Subtraction 2 numbers, whole no. parts to thousands, decimals to hundredths.
3. Solves multiple-step word problems.

[illegible]

level F

1. Adds — carrying 4 or more place numbers, more than 2 addends.
2. Adds, 2 or more numbers with whole number parts and decimals to the millionths.

1. Subtracts 2 decimal numbers with whole number parts and decimals to the millionths.

level G

1. Adds 2 negative numbers, uses number line or thermometer.
2. Adds negative and positive numbers. Uses number line or thermometer.
3. Adds any 2 numbers which are multiplied by the same base to the same positive power.

1. Subtracts — number from + number. Vice versa. Uses # line/thermometer.
2. Subtracts two — numbers. Number line/thermometer.
3. Does subtraction with numbers written in exponential form with the same base (2 thru 10) to the same positive number.

level H

1. Adds all combinations of negative and positive numbers (more than 1 digit) without using a number line.
2. Writes small whole numbers or decimal numbers in scientific notation using negative powers of bases 2 thru 10. Adds 2 numbers which are multiplied by the same base to the same negative power.
3. Adds numbers with decimal parts to the thousandths place or more.

1. Does subtraction with numbers written in exponential form with the same base (2 thru 10) to the same negative power.

level I

continued from page 3

11. Applies the distributive principle for multiplication in base three, five, six, or seven.
12. Solves one-step word problems requiring multiplication in base three, five, six, or seven.
13. Uses repeated subtraction to solve division problems in base three, five, six, or seven.
14. Solves division problems with a number line for numbers in base three, five, six, or seven.
15. Does division with a two or more digit product divided by a one digit factor for three, five, six, or seven base number (may refer to multiplication matrix).
16. Applies the distributive principle for division in working with numbers in base three, five, six, or seven.
17. Solves one-step word problems requiring division in base three, five, six, or seven.
18. (H1) Develops the binary counting system (base two) and performs addition, subtraction, multiplication, and division in base two.
19. (H2) Develops the counting system for base twelve or other base created by the student. Adds, subtracts, multiplies, and divides in this base.

	level A	level B	level C	level D
MULTIPLICATION				1. Groups sets to complete statements. 2. Repeat addition to solve multiplication problems, limit 5x10. 3. Multiplies using 0-1 as factors. 4. Oral-written multiplication, factors 2, 3, 4 and 5. 5. Fill-in frames — missing factors. To 5x10. 6. Completes 2 multiplication statements, illustrates commutative principle. 7. Uses term: product, factors. 8. Solves 1-step word problems, multiplication, to 5 × 10.
DIVISION				1. Divides a set into subsets. 2. Uses multiplication facts to solve division. To 5x10, incl. 0 and 1. 3. Uses terms: dividend, divisor, quotient. 4. Divides problems thru 50 ÷ 5. 5. Divides 2, 3, 4, 5 by 1 and into 0. 6. Fill-in frames, missing quotient. 7. Solves 1-step problems thru 5 × 10.

level E **MULTIPLICATION**	level F	level G	level H	level I
1. Uses repeated addition to solve multiplication problems. 1 place times 1, 2, 3 place number. Combinations 9 × 9. 2. Timed test products through 9 × 9. 3. Uses commutative principle for multiplication. Solves problems, 1 place times 2 place factor. 4. Uses associative principle for multiplication. Multiplies more than 2 numbers with single digit factors. 5. Uses distributive principle to simplify multiplication problems. 6. Multiplies 1 digit factor times 2 digit factor. Uses mult. algorithm. 7. Multiplies 1 digit factor times a 3 or more digit factor. Uses mult. algorithm. 8. Finds squares of numbers 1-10. Writes exponential form — identifies base and exponent. 9. Uses algorithm for multiplication by 10's to 100,000. 10. Multiplies 2 digits by 2 digits using algorithm. 11. Solves multiple-step word problems.	1. Checks products by inverting factor order. 2. Uses associative principle to simplify multiplication of 1 & 2 digit numbers. 3. Uses distributive principle to simplify multiplication of 1 & 2 digit numbers. 4. Uses multiplication algorithm for a 2 digit number times a 2 or more digit number. 5. Multiplies a 3 digit number times a 3 or more digit number. To 1,000,000. 6. Finds products of 11's, 12's tables. 7. Multiplies decimal number times a whole number. 8. Multiplies decimal number to 10ths by a decimal number to 10ths. 9. Multiplies a 1 place decimal number times a one or more place decimal number. 10. Solves two-step word problems.	1. Multiplies numbers in exponential form when the bases are the same. All powers positive (2 thru 10). 2. Multiplies whole number by mixed decimal to tenths. Checks point by estimation. 3. Applies distributive principle for multiplying decimal numbers to 10th's. 4. Multiplies decimal number to 100th's by decimal to 10th's. Checks point by estimation. 5. Multiplies 2 decimal numbers with decimal parts to the hundredths. 6. Multiplies 2 decimal number factors with decimal parts to the thousandths.	1. Multiplies negative times positive, uses correct sign for the product. 2. Multiplies negative times negative and states the product is positive. 3. Multiplies numbers written in exponential form, with the same base with negative and for positive powers.	
1. Finds missing factors or quotients for division problems thru 81 ÷ 9. Timed. 2. Uses distributive principle, simple numbers, simplify division problems. 3. Uses "ladder" division with 1 digit divisor, 2 or more digit dividend. No remainder. 4. Divides with remainders, 1 digit factor and product. 5. Divides with remainders, 1 digit factor, 2 or more digit products. 6. Checks division problems by inverse operation of multiplication for 2 or more digit products. 7. Solves 1-2 step word problems. **DIVISION**	1. Uses repeated subtraction to solve division problems. 2. Divides a 2 or more digit dividend by a 2 or 3 digit divisor. 3. Rounds numbers to estimate quotients. Dividends to 2000. 4. Uses division algorithm with 2 or 3 place factors, writes R, remainder. 5. Uses fractional notation as a way of solving division problems written as fractions. 6. Writes remainder as fraction. Divisors to 12. 7. Divides decimal by whole number. 8. Two-step word problems.	1. Writes a remainder as a fractional part of the divisor, reduces, lowest terms. 2. Uses distributive principle to simplify division problems for 2 or 3 digit dividends, 2 digit divisors. 3. Divides numbers in exponential form when the bases are the same and all powers are positive bases 2 thru 10. 4. Divides numbers with decimals to the 100's place in both factor and product. Annexes zeroes when necessary. 5. Divides numbers with decimals to the thousandths place in both factor and product. Rounds decimals, estimates quotients.	1. Performs division with a negative and positive number. Uses the correct sign for the quotient. 2. Divides a negative number by a negative number and states that the quotient is positive. 3. Divides numbers written in exponential form with the same base with negative and/or positive numbers. 4. Finds square root of numbers by using the square root algorithm and applies the Pythagorean rule to right triangle problems. 5. Finds cubes of whole numbers. Identifies cube roots of numbers by using simple charts or experimentation.	

level A	level B	level C	level D
		1. Adds, subtracts mixed sets of problems. No borrowing. No carrying. Vertical or horizontal form. Sums to 99. 2. Sums & differences in money, measurement, time & geometry problems. No unit conversion. Sums to 18. 3. Solves one-step problems adding and subtracting money, time & measurement values to 18. 4. Fills in >, <, =, ≠ in addition, subtraction problems using money, time and measurement values to 18. No unit conversion. 5. Inserts + or — to complete an equation. 6. Fills in missing addend in 2-step equations combining add. and subt.	1. Addition, subtraction. Vertical or horizontal. Money, time & measurement. No carrying/borrowing. To 2000. 2. Same with carrying & borrowing. 3. Multiplication and division. Any earlier skills. Through 5 × 10. 4. Solves 1 or 2-step word problems. 5. Supplies missing operational signs.
1. Divides objects or sets of objects. 2. Identifies ½ of an object or set of objects. 3. Uses correctly and responds to use of the terms "whole" and "one half" in reference to objects or sets of objects.	1. Identifies "½" of an object or set of objects. Limit of 12 objects. 2. Divides an object or set of objects in "half."	*Throughout this unit, fractions in word and numeral forms will be taught together and then used interchangeably. 1. Divides a whole object into halves, thirds, or fourths and identifies an object divided into halves, thirds or fourths. 2. Identifies ½, ⅓, and ¼ of a whole object. Circles fraction which shows what part of an object is shaded. States that the terms one-half, one-third, and one-fourth mean "one of ___ equal parts." 3. Divides a set of objects into 2, 3, or 4 equal parts when instructed to divide a set into halves, thirds, or fourths and identifies sets of objects divided into halves, thirds or fourths. 4. Draws a circle around ½, ⅓, or ¼ of a set of objects and selects the fraction which describes the circled part of a given set.	1. Identifies objects using ⅙, ⅛, ⅔, ¾. 2. Divides sets of objects into parts. 3. Adds any 2 fractions with same denominator. 4. Adds 2 fractions, same denominator — ½'s, ⅓'s, ¼'s, ⅙'s, ⅛'s only. Sums equal 1, 2, 3. 5. Identifies an equivalent fraction for a given fraction, using pictures.

level E [redacted]	level F	level G	level H	level I
1. Adds, subtracts w/wo carrying to 1,000 in any direction — money to $1.00, time units. 2. Solves, equations — "N" as a variable. 3. Multiplies, divides, combinations thru 9×9, $81 \div 9$. 4. Supplies missing sign $>, <, =$ or $\neq$ for combinations of $+, -, \times$ or $\div$. 5. Finds averages for numbers. To 1000. 6. Selects principle decribing equation & vice versa. 7. Solves 1 or 2 step word problems with fractions to ⅛, time, money, measurement units, numbers to 1,000.	1. Adds, subtracts to 1,000,000 all directions. 2. Mixed exercises in multiplication and division. 3. Supplies missing $>, <, =$ or $\neq$ in addition, subtraction, multiplication, division problems. 4. One-, two-step word problems using all processes, fractions, money, time, measurement units.	1. Adds, subtracts positive and negative numbers. 2. Adds, subtracts, multiplies and divides decimals to 2 places. 3. All processes all fractions. 4. Solves 1- and 2-step word problems. 5. Multiplies to find % of whole numbers.	1. Solves multiple step word problem. 2. Solves insurance problems — straight life, endowment insurance, etc. 3. Solves problems involving tax rate in mills per dollar. 4. Solves banking problems — checks, depositing, withdrawing money. 5. Solves stock and bond problems.	
1. Uses all common fractions in dividing objects and sets. Responds to names. 2. Finds fractional parts of whole numbers giving a whole answer number. 3. Uses "numerator" — "denominator" to identify fraction parts. 4. Changes fraction to an equivalent fraction, with a different denominator, without the aid of pictures. Reduces fraction to lowest terms as a special case of the above. 5. Places $>, <$, or $=$ between 2 simple fractions to show relationship. Reduces fractions to lowest terms. 6. Adds 2 or more fractions same denominator. Performs subtraction of fractions. Reduces to lowest terms. [redacted]	1. Identifies an improper fraction and changes improper fractions to mixed fractions in lowest terms. 2. Performs simple addition, subtraction and multiplication with fraction having unlike denominators using picture regions, number lines, etc. 3. Finds greatest common factor for a set of numbers and uses the greatest common factor to reduce fractions to lowest terms. 4. Finds LCM for a set of whole numbers and finds the LCM for a given set of fractions. 5. Uses the algorithm for addition and subtraction of fractions, finds LCD. 6. Performs addition, subtraction of fractions, unlike denominators. Reduces to lowest terms. Uses commutative, associative and inverse properties in checking problems. 7. Performs column addition, 2 or more simple fractions, like and unlike denominators. Reduces to lowest terms. Performs column subtraction. 8. Adds, subtracts fractions and whole numbers with improper fractions and mixed fractions. Answers, lowest terms. 9. Uses $>, <, =$ or $\neq$ to show relationship between pairs of fractions. 10. Rearranges groups of fractions into ordered set. 11. Uses $>, <$ and $=$ to show relationship between 2-step equations using fractional expressions with $+, -$ and $\times$. 12. Writes decimal equivalent for simple fractions (½, ¼ etc.). Changes decimal equivalents to fractions. 13. Performs more complex multiplication of fractions including improper and mixed fractions. Finds common divisor, lowest terms. 14. Solves one-step word problems.	1. Writes decimal equivalent for any proper or improper fraction and changes decimal equivalents to fractions. 2. Uses multiplication algorithm for multiplying all fractions. 3. Divides simple fractions, improper fractions, mixed fractions by using reciprocals. Lowest terms. 4. Solves problems with fractions raised to whole number powers less than 5. 5. Solves multiple-step word problems.	1. Finds the value of a whole number raised to a fractional power.	

	level A	level B	level C	level D
MONEY		1. Recognizes penny, nickel, dime. 2. Matches coins with numerical value, word cent used. 3. Recognizes quarter. 4. Finds values, pennies and nickels, uses ¢ sign. Sums to 12¢.	1. Matches a quarter with its numerical value or with value in other coins. 2. Finds the value of pennies, nickels, dimes, and quarters. Finds equivalent coin combinations. Limit 99¢. 3. Identifies coins using pennies, nickels, dimes, and/or quarters. Totals a collection of coins and indicates if they are enough to buy an article. Limit 99¢. 4. Uses decimal point and $ in writing money values, for $.10, $.25, $1.00 and $1.50 only.	1. Identifies ½ dollar, dollar, finds value, uses dollar sign. 2. Adds, subtracts money value. Horizontal/vertical. 2 addends. Sums to $1.00. 3. Totals coins, bills, greater, less, equal. 4. Writes money values using signs. 5. Identifies change in coins. 6. Solves one-step word problems.
TIME		1. Reads numerals to 12 on clock face, orally. 2. Writes numerals to 12 on clock face. 3. Given only hour hand pointing between 2 numerals identifies interval as "before" and "after."	1. Places an arrow on a "clock" number line to identify a given number of marks after the arrow to the end. 2. Counts marks and/or places an arrow on clock number line which is bent into a circle to form clock face. Responds to word "minutes."	1. Selects matching clock faces. 2. Matches clock face to printed time. 3. Selects printed time to match clock face. 4. Draws hour, minute hand, draws both to show printed time. 5. Writes down other way to state times. 6. Matches time statements and clock faces. 7. Supplies minute count. 8. Supplies hour statement. 9. Writes time from clock face. 10. Draws time on face from statement.

level E	level F	level G	level H	level I
1. Identifies change in coins with purchase amounts up to $10.00. 2. Adds-subtracts money values, using cent and decimal notation. 3. Totals purchases, amounts less than $10.00. Indicates change. Counts out change starting with the total value of the purchase. [redacted]	1. Multiplies & divides money values using $ and decimal point. 1-digit multiplier/divisor. Limit $20.00. 2. Solves multiple-step word problems involving multiplication and division of money values.			
[redacted] 1. Identifies calendar units, # days in week, # days in each month. Completes calendars. Word problems. Writes given date in words and numbers or in numbers. 2. Reads any time on clock face, shows any time using clock face. Writes & reads time using appropriate vocabulary & punctuation. 3. Uses "morning", "afternoon", "night" dividing day at noon & midnight writes time & "A.M." & "P.M." 4. Finds minutes elapsed between 2 minute hand readings. Limit 2 hours. Calculates passage of time. 5. Solves problems adding/subtracting hours/half hours on clock face. 6. Identifies second hand. Reads time on clock with second hand. Says there are 60 seconds in a minute. 7. Adds/subtracts time units. One step problems. No regrouping. Limit 2½ hrs. 8. Problems in reading bus, train, plane schedules. 9. Addition/subtraction 2-3 time units. 1-2 regroupings. Seconds through years.	1. Adds, subtracts units of time extending beyond 12:00. 2. Identifies equivalent values: decade, fortnight, score, century, leap year days. 3. Reads time — 24 hr. clock. 4. Identifies time zones, works problems requiring time changes. 5. Identifies the change which daylight saving time makes in solving time problems.	1. Names very small/very large time unit, e.g., nano-second, millenium. 2. Gives practical instances for above. 3. Solves word problems.		

	level A	level B	level C	level D
SYSTEMS OF MEASUREMENT		1. Demonstrates comparative concepts. 2. Recognizes use of ruler, yardstick. 3. Ruler divisions, inches, 3 rulers = 1 yard. 4. Identifies dozen, one-half object(s).	1. Measures objects to nearest inch. 2. Solves measurement problems involving 12 inches in a foot. Differentiates measurements stated in inches & feet. Limit 3 feet. 3. States & shows cups per pint, pints per quart and reverse.	1. Problems — 3 ft. = 1 yd., 36 in. = 1 yd. 2. Uses equivalent liquid measures. 3. Word problems — equivalent measures. 4. Measures length of lines or objects (up to 36 inches) nearest ¼ inch. 5. Measures lines, objects to nearest ¼ inch.
GEOMETRY		1. Identifies figures, circle, square, triangle, rectangle. 2. Reproduces circle, square, triangle, rectangle from memory.	1. Recognizes, names solids: sphere, cylinder, cube, cone, rectangular. 2. Reads directions with names of simple geometric figures.	1. Identifies, curves, lines, segments, corners. 2. Labels points in line. Names line segments by end-points. 3. Draws pictured representations of solids or selects correct pictured representation when name of solid is given. Names pictured representations of solids.
SPECIAL TOPICS			1. Writes Roman numerals 1-30 & reverse.	1. Writes Roman numerals 1 to 100 & vice versa. 2. Reads thermometer — records temperature using degree symbol. 3. Reads bar graph to locate information.

level E	level F	level G	level H	level I
SYSTEMS OF MEASUREMENT 1. Solves problems requiring conversion of tons into pounds, pounds into ounces, equivalent measures of ounces-pounds, pounds-tons. 2. Adds, subtracts, multiplies, divides, denominant numbers, uses regrouping to combine same units. 3. Reads speedometers. $d=st$ problems. 4. Problems using temperatures. Above and below zero. C and F. No conversion. 5. Uses equivalent measures — feet, rod, yard, mile. Solves problems using these conversions. 6. Uses a ruler to measure in centimeters. 7. Measures lines — nearest inch and centimeter. Makes comparisons.	1. Performs conversions between two metric length measures, mm. to km. 2. Performs conversions between metric and English measures. 3. Uses a meter stick for measuring.	1. Weighs in grams, kilograms. Makes gram-kilogram conversions. 2. Converts metric to English. Vice versa.		
1. Identifies parts of a line segment. Names a line for any 2 points in it. 2. Identifies a right angle and names angle by three points. 3. Given words equilateral triangle, right triangle, quadrilateral, draws or selects figure. Vice versa. 4. Identifies lines which "look parallel." 5. Uses compass — draws circle. 6. Identifies intersecting lines, locates point of intersection. 7. Names points in a line, dot used as a representation of a point. 8. Measures line segment to nearest $\frac{1}{2}$ and $\frac{1}{4}$ inch. 9. Identifies lines which are perpendicular. **GEOMETRY**	1. Finds perimeters for polygons by measuring. 2. Uses square inch model to find areas of simple plane figures. 3. Makes conversions among square units. 4. Uses a 1 cubic inch square as a model to find volumes of simple solids. Solves volume problems. 5. Identifies plane geometric figures: trapezoid, pentagon, hexagon, and other regular polygons. 6. Locates circle parts: center, radius, diameter, chord, arc, semicircle, tangent. 7. Identifies a "ray" as a line segment with 1 endpoint and extending indefinitely in the other direction. 8. Measures line segment to the nearest $\frac{1}{8}$ and $\frac{1}{16}$ of an inch. 9. Uses compass to bisect a line segment, construct a line perpendicular to a given line. 10. Identifies the vertex of a triangle or angle.	1. Identifies plane geometric figures: parallelograms, rhombus, convex and concave irregular polygons. 2. Finds perimeter for: parallelograms, rhombi, regular, irregular polygons by measuring. 3. Measures angles using protractor, draws angles. Identifies acute and obtuse angles. 4. Identifies value of "Pi," π, and can demonstrate its derivation. 5. Finds circumference of circle using the formulas: $C = \pi D = 2\pi R$. 6. Finds area of circle using $A = \pi r^2$. 7. Uses formulas to find perimeter of: square, rectangle and triangle.	1. Finds surface area of prisms, cylinders, cones, pyramids. 2. Uses formulas to find volumes of familiar solids — prisms, cylinders, pyramids, cones, spheres. 3. Identifies congruent line segments and angles. 4. Constructs a line segment or angle congruent to a given line segment or angle. 5. Constructs parallel lines cut by a transversal. Identifies transversal. 6. Constructs perpendicular. Identifies right angles. 7. Identifies angles formed by a transversal. Demonstrates vertical angles (pairs), corresponding are congruent. 8. Uses the Pythagorean theorem to find the length of an unknown side of a right triangle. 9. Tabulates properties of plane and solid geometric figures.	
1. Writes Roman numerals for numbers to 500 and vice versa. 2. Reads distances from simple maps. 3. Reads and makes graphs-charts. **SPECIAL TOPICS**	1. Writes ratios as fractions, finds missing terms in a proportion. 2. Converts fractions and decimals to percents and vice versa. 3. Completes patterns for "what's my rule?" games, solves function problems by finding the rule. 4. Solves conversion problems using acre, sq. yd., rod, sq. mile. 5. Reads, makes graphs and charts, including bar, line graphs with fractions and decimals.	1. Locates points on a coordinate plane and graphs ordered pairs. 2. Uses Venn diagrams to picture union and intersection of sets. 3. Solves simple algebraic equations with one unknown. 4. Solves word problems.	1. Identifies integers, rational, irrational numbers, identifies sets which exhibit the closure property. 2. Completes mathematical and geometric logical deductive statements, using "if ...., then ...." 3. Makes charts to compare United States currency with that of other countries.	

SEPT 1968 PLATE NO. 10771 (REV. 9-66)

LEARNING RESEARCH
AND DEVELOPMENT CENTER
UNIVERSITY OF PITTSBURGH
PITTSBURGH, PA. 15213

RESEARCH FOR
BETTER SCHOOLS, INC.
121 SOUTH BROAD STREET
PHILADELPHIA, PA. 19107

ipi MATHEMATICS PRE-TEST

Name ______________________________ Date ____________________

Class ______________________________ Number __________________

LEVEL C, NUMERATION (01)

SKILL 1

TL. PTS.	
9	100%
NO. OF PTS.	%
8	89
7	78
6	67
5	56
4	44
3	33
2	22
1	11

Numeration: Directs the student to read, write, count, and put into sequence numbers to 200; and to skip count by 2's, 5's, and 10's to 200 from any starting point.

Fill in the empty boxes. Count down in each column.

129			153		169	177	185	193
130	138	146			170		186	
				163	171		187	195
132	140	148		164		180	188	196
133			157			181	189	197
	142	150	158				190	
	143	151		167	175			
				168		184	192	200

SAMPLE WORKSHEET

Name ______________________________ Date ________________ Grade ________

Fill in the missing numerals.

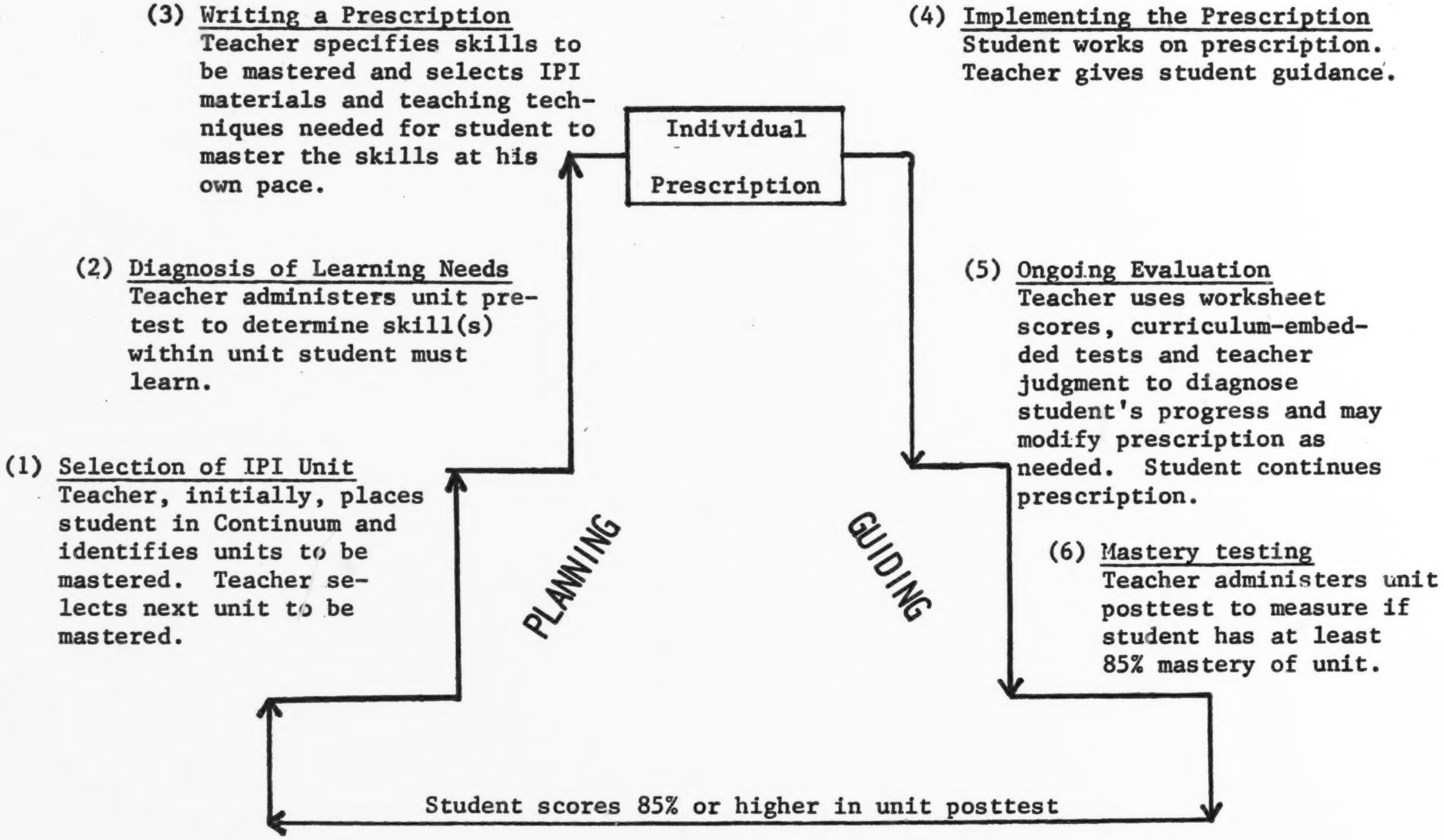
116	117				

	192				

96					

The steps an IPI teacher takes in planning and conducting IPI in the classroom closely resemble the general procedures followed in a system of individualized instruciton. Figure 6 takes these general procedures and translates them into the specific steps used in IPI. Study Figure 6 carefully to follow the flow of instruction in IPI.

Figure 6: Steps in Individually Prescribed Instruction



(1) Selection of IPI Unit
Teacher, initially, places student in Continuum and identifies units to be mastered. Teacher selects next unit to be mastered.

(2) Diagnosis of Learning Needs
Teacher administers unit pretest to determine skill(s) within unit student must learn.

(3) Writing a Prescription
Teacher specifies skills to be mastered and selects IPI materials and teaching techniques needed for student to master the skills at his own pace.

(4) Implementing the Prescription
Student works on prescription. Teacher gives student guidance.

(5) Ongoing Evaluation
Teacher uses worksheet scores, curriculum-embedded tests and teacher judgment to diagnose student's progress and may modify prescription as needed. Student continues prescription.

(6) Mastery testing
Teacher administers unit posttest to measure if student has at least 85% mastery of unit.

THE FOLLOWING STATEMENTS WILL HELP YOU DESCRIBE THE STEPS IN INDIVIDUALLY PRESCRIBED INSTRUCTION. USE THE 5 X 8 CARD TO UNCOVER THE ITEMS. REFER TO FIGURE 6 AS NEEDED.

EXERCISE

I. Match the items in Column A to the items in Column B by drawing a line between related items:

COLUMN A Steps in Individually Prescribed Instruction	COLUMN B Activities
1. Selection of IPI unit	a. Student works on prescription. Teacher gives student guidance.
2. Diagnosis of learning needs	b. Teacher specifies skill to be mastered and selects IPI materials and teaching techniques needed for student to master the skills.
3. Writing a learning prescription	c. Teacher selects next unit to be mastered.
4. Implementing the prescription	d. Teacher administers unit pretest to determine skill(s) within unit student must learn.
5. Ongoing evaluation	e. Teacher administers unit post-test to measure student's mastery of unit.
6. Mastery testing	f. Teacher uses curriculum-embedded tests and teacher judgment to diagnose the student's progress; may modify prescription. Student continues prescription.

……

1 - c; 2 - d; 3 - b; 4 - a; 5 - f; 6 - e

II. Complete

1. In IPI, the student's program of studies is called
(a)______________________________.

....

a. Prescription

****

2. In IPI, the teacher:

a. Varies objectives in Step(s)______________________.
b. Varies materials and equipment in Step(s)_____________.
c. Varies teaching techniques in Step(s)______________.
d. Varies instructional time in Step(s)______________.
e. Uses IPI achievement tests in Step(s)__________.
f. Requires 85% mastery of unit in Step(s)____________.

....

a. Steps 1 and 5
b. Steps 3 and 5
c. Steps 3 and 5
d. Steps 3 and 5
e. Steps 2, 5 and 6
f. Step 6

****

END OF EXERCISE

POSTTEST: Section I: How Instruction is Individualized in IPI

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Select the IPI resource varied in each statement. Write the letter of the correct answer in the blank on the right.

1. Teacher prescribes one third-grader the skill, C-Frac.-2, and another D-Num.-1 (a) Objectives (b) Achievement tests (c) Teaching techniques ________

2. Student is prescribed an abacus to help him master a skill in B-Num. (a) Instructional time (b) Materials and equipment (c) Objectives ________

3. Teacher prescribes a curriculum embedded test to assess student's mastery of skill 3 in D-COP (a) Teaching Techniques (b) Materials (c) Achievement tests. ________

Select the step taken in IPI described in each statement. Write the letter of the correct answer in the blank on the right.

4. Teacher uses curriculum embedded test to diagnose student's progress (a) mastery testing (b) diagnosing of learning needs (c) Ongoing evaluation. ________

5. Teacher specifies skills to be mastered (a) Diagnosis of learning needs (b) Ongoing evaluation (c) Writing prescription. ________

The statements below describe one of the following:
a. IPI
b. Generalized system of Individualization
c. Both

Select the correct answer and place the letter in the blank on the right.

6. Mastery requirement of 85%. ________

7. Flexible scheduling ________

8. Learning goals are carefully sequenced ________

9. Variety of arrangements of learning settings ________

10. Teacher judgment used to assess learning characteristics ________

ANSWER KEY

POSTTEST: Section I: How Instruction is Individualized in IPI

1. a
2. b
3. c
4. c
5. c
6. a
7. b
8. c
9. c
10. a

TEACHING IN IPI

Summary Sheet: An Overview of Individualized Instruction and IPI

Generalized System of Individualized Instruction	IPI: A Specialized System of Individualized Instruction
DEFINITION	
Individualized instruction consists of the planning and conducting of instruction in a systematic way that provides each student with a program of studies suited to his learning needs and characteristics.	IPI is an instructional system in which teachers use a set of behavioral objectives correlated with diagnostic instruments and curriculum materials, teaching techniques and pacing to plan and conduct with each student an individual learning prescription.
STRATEGY FOR INDIVIDUALIZING INSTRUCTION	
1. Vary instructional objectives from student to student. 2. Vary the diagnostic instruments from student to student. 3. Vary learning materials and equipment from student to student. 4. Vary learning settings from student to student. 5. Vary teaching methods from student to student. 6. Vary instructional time from student to student.	1. Vary skill objectives from student to student. 2. Vary IPI achievement tests from student to student. 3. Vary IPI worksheets, supplementary materials and devices from student to student. 4. Vary learning techniques (learning settings and teaching methods) from student to student. 5. Vary pacing from student to student.
STEPS IN INDIVIDUALIZING	
1. Selection of instructional objective. 2. Diagnosis of learning needs. 3. Prescription of program of studies. 4. Implementing prescribed program. 5. Ongoing evaluation. 6. Mastery testing.	1. Selection of IPI unit. 2. Diagnosis of learning needs. 3. Developing a prescription. 4. Implementing the prescription. 5. Ongoing evaluation. 6. Mastery testing.

TEACHING IN IPI

Glossary

Behavior: Any overt, observable activity exhibited by the student.

Diagnosis: Determination of the learning needs and characteristics of a student from data obtained by the use of diagnostic instruments.

Diagnostic instruments: Testing devices and assessment procedures used to gather data on student behavior in terms of learning needs and characteristics.

Flexible scheduling: The allocation of instructional time to different subject areas.

Implement: Carry out or execute a plan for instruction or a Prescription as designed.

Instructional resources: All objects, devices, physical facilities, and arrangements used by the teacher and students in an instructional program.

Instructional time: The amount of time a student spends in a subject area (flexible scheduling) or on a particular learning goal (pacing.)

Learning characteristics: A set of student behaviors which can facilitate or impede his learning something new. Such things as organic development and peer-group relations affect the student's learning process and are characteristic of how he performs in school.

Learning needs: A behavior or part of a behavior that a student must master. It describes what the student needs to learn in relation to a particular learning goal.

Learning settings: Arrangements or groupings of students ranging from one student to large group instruction with or without the direct involvement of the teacher. The groups are formed on the basis of individual needs and are not permanent arrangements.

Mastery: A stated criterion of minimum acceptable competency in performing a specific behavior.

Materials and Equipment: All printed materials, audio-visual aids, mechanical devices, laboratory supplies, and objects that contain or convey information in an instructional program.

Mathematics Continuum: A sequence of behavioral objectives.

Objective: A description of the intended outcomes of instruction. It may be expressed as a very broad, general goal, a more specific goal or a very specific description of student behavior. Depending upon its degree of specificity, it may be called a goal, aim, purpose, objective (instructional or behavioral), skills, etc.

Pacing: Rate of progress through the IPI continuum or any curriculum which allows the individual student to master the skills or objectives. Pacing refers to the amount of instructional time spent on a particular objective.

Prescribe: Select and describe the instructional resources needed for a student to master a learning goal or objective.

Teaching Methods: Specific procedures for guiding a student in learning a new behavior. The method, selected by the teacher, may or may not require the teacher's direct supervision as in the use of small group discussion or self-instructing materials.

ED0 305 84

TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 2

Behavioral Objectives and the IPI Mathematics Continuum

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RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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BEHAVIORAL OBJECTIVES AND THE IPI MATHEMATICS CONTINUUM

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SUMMARY SHEET FOR VOLUME 40

OVERVIEW

BEHAVIORAL OBJECTIVES AND THE SPECIFIC OBJECTIVES IN IPI MATHEMATICS

This section discusses the importance of behavioral objectives in a system of individualized instruction. It also describes the IPI Mathematics Continuum in detail.

The teacher identifies behavioral objectives:

1. Selects objectives stated in terms of the learner doing or producing something.
2. Identifies that part of the statement which describes the action or product.
3. Identifies in the objectives the conditions for performance.
4. Identifies the mastery criterion contained in the objective.

PRETEST: Section I: Behavioral Objectives and the Specific Objectives in IPI Mathematics

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Answer Yes or No

1. To name five principles of learning.

This statement is stated in terms of the learner doing or producing something. __________

2. To teach the important events occuring during the "Golden Age of England."

This statement is stated in terms of the learner doing or producing something. __________

3. Place a check mark next to the words in the column which describes observable learner behavior.

(a) To enjoy (a)__________

(b) To list (b)__________

(c) To know (c)__________

(d) To recite (d)__________

(e) To write (e)__________

Answer Yes or No

4. To name orally the 50 states zip codes appropriate to each of the states.

This statement indicates the condition necessary for the behavior to occur. __________

5. To identify lower and upper case letters

This statement indicates the conditions necessary for the behavior to occur. __________

6. Given a human skeleton, the student must be able to correctly identify by labeling at least 40 of the following bones; there will be no penalty for guessing (list of bones inserted here).

This statement indicates the minimum acceptable mastery criterion. __________

7. Given an otherwise properly functioning TV receiver the learner must be able to adjust the ion trap.

   This statement indicates the minimum acceptable mastery criterion. ____________

Write the letter of the correct answer in the blank on the right.

8. When presented with a form the student must fill out a standard accident report.

   This statement: ____________

   (a) Omits the stating of the minimum acceptable.
   (b) Does not contain a verb which describes observable learner behavior.
   (c) Omits the condition necessary for the behavior to occur.

9. To identify a well-balance breakfast, given the foods to be eaten and amounts, within 10 seconds.

   This statement: ____________

   (a) Does not fulfill the criteria for indicating who is doing the behaving.
   (b) Contains all criteria of a behavioral objective.
   (c) Does not contain a verb which describes observable learner behavior.

10. To identify the twelve months and the seven days with 100% accuracy.

   This statement: ____________

   (a) Contains all criteria of a behavioral objective.
   (b) Omits the condition necessary for the behavior to occur.
   (c) Omits the stating of the minimum acceptable mastery criterion.

ANSWER KEY

PRETEST: Section I: Behavioral Objectives and the Specific Objectives in IPI Mathematics (pp. 6-11)

1. Yes
2. No
3. (a)
   [✓ (b)]
   (c)
   (d)
   [✓ (e)]
4. No
5. No
6. Yes
7. Yes
8. a
9. b
10. b

Audio-Tape #2: Claire Moshy, Identifying Behavioral Objectives. Research for Better Schools, Inc. (Philadelphia, Penna.) 1967.

DIRECTIONS: Listen to Audio-Tape #2 and follow the directions as given.

Behavioral Objectives

The following criteria will help you identify a behavioral objective. A behavioral objective is stated in terms of:

1. The learner
2. Observable behavior
3. Conditions of performance
4. Mastery criterion (if not specified, it is 100%)

EXERCISE

(for Audio-tape #2)

Criterion 1: Who is doing the behaving?

	Learner	Teacher
1. To name the time zones in the Unites States.		
2. To teach the causes of the Civil War.		
3. To use a film to introduce simple machines.		
4. To state the causes of the Civil War in writing.		
5. To construct a model airplane.		
6. To cover the use of a comma.		
7. To name the letters of the alphabet in order.		

END OF EXERCISE

(Turn on the recorder.)

EXERCISE

(for Audio-tape#2)

Criterion 2: Is the learner doing or producing something?

	YES	NO
1. To name the three primary colors from memory.		
2. To understand that multiplication is repeated addition.		
3. To appreciate the literary value of Greek lyric poetry.		
4. To construct an outline of Chapter 12 in the history book.		
5. To list chronologically the events leading up to World War I.		
6. To develop good health habits.		
7. To know how a radio works.		
8. The learner describes the function of the United Nations.		

EXERCISE

(for Audio-tape #2)

Criterion 3: Under what conditions is the learner-behavior to occur?

1. Given a vocabulary list of 95 most common nouns, the student will pronounce all the words correctly.
2. To identify upper and lower case letters.
3. To identify well-balanced meals when presented with ten breakfast menus.
4. To name the prehistoric animals when given pictures of them.
5. To recite the "Ancient Mariner."
6. To name the fifty states orally when presented with their zip codes.
7. To fill in the names of the months and the days of the week on a calendar.

END OF EXERCISE

(Turn on the recorder.)

EXERCISE

(for Audio-tape#2)

Criterion 4: What is the mastery criterion?

1. To count to twenty accurately from memory within twenty seconds.

2. To reduces a given list of fractions to lowest terms.

3. To alphabetize a random list of works with 100% accuracy.

4. To assemble a jigsaw puzzle within fifteen minutes.

5. To translate orally into English a selected French poem.

6. To name each primary and secondary color, when presented with a series of colored cards.

7. To run a 110-yard low hurdle race conforming to AAU standards.

END OF EXERCISE

(Turn on the recorder.)

POSTTEST: Section I: Behavioral Objectives and the Specific Objectives in IPI Mathematics

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Answer Yes or No:

1. To identify the five basic parts of a green plant.

   This statement is stated in terms of the learner doing or producing something. ____________

2. To use a film to demonstrate how to construct an aquarium.

   This statement is stated in terms of the learner doing or producing something. ____________

3. Place a check mark next to the words in the column which describes observable learner behavior.

   (a) To believe (a)____________

   (b) To circle (b)____________

   (c) To understand (c)____________

   (d) To appreciate (d)____________

   (e) To multiply (e)____________

Answer Yes or No:

4. To name a dinosaur given a picture of one.

   This statement indicates the condition necessary for behavior to occur. ____________

5. To write the names of the 50 states given the abbreviations.

   This statement indicates the condition necessary for behavior to occur. ____________

6. The student must be able to spell correctly at least eight of the ten words called out to him during an examination period.

   This statement indicates the minimum acceptable mastery criterion. ____________

Answer Yes or No:

7. The student must be able to use the chemical balance well enough to weigh materials accurately to the nearest milligram.

   This statement indicates the minimum acceptable mastery criterion. __________

Write the letter of the correct answer in the blank on the right:

8. To list the three most important causes of the Civil War as agreed upon by at least two references given unlimited access to six references.

   This statement: __________

   (a) Does not fulfill the criteria for indicating who is doing the behaving.
   (b) Omits the conditions necessary for the behavior to occur.
   (c) Omits the stating of the minimum acceptable mastery criterion.

9. To know 4 out of 5 plays of Shakespeare when presented with their titles.

   This statement: __________

   (a) Contains all criteria of a behavioral objective.
   (b) Does not fulfill the criteria for indicating who is doing the behavior.
   (c) Does not contain a verb which describes observable learner behavior.

10. Given a contract with certain legal terms circled, the student is asked to write a definition of each of each of the circled terms.

    This statement: __________

    (a) Omits the condition necessary for the behavior to occur.
    (b) Omits the stating of the minimum acceptable mastery criteria.
    (c) Contains all the criteria of a behavioral objective.

ANSWER KEY

POSTTEST: Section I: Behavioral Objectives and the Specific Objectives in IPI Mathematics (pp. 6-11)

1. Yes

2. Yes

3. (a)
   [✓ (b)]
   (c)
   (d)
   [✓ (e)]

4. Yes

5. Yes

6. Yes

7. Yes

8. C

9. C

10. C

As we examine the IPI Mathematics Continuum, we can apply the distinctions made concerning different levels of learning goals and objectives in Audio-tape #2.

The general aims of education in America indicate that children should study mathematics. This then is the broad general level. Defining the particular course of study and defining of each area within the Mathematics Continuum can be considered the second, more concrete, level. Stating the specific objectives or skills in each unit of mathematics is the most specific or behavioral level of the Continuum.

The general and concrete levels are important to you as an IPI teacher. They give you a setting for the part you play in developing a student who is competent in IPI mathematics.

The specific behavioral objectives or skills are most important to you since they will be an integral part of your day-to-day teaching. These are the skills that will be examined in terms of the four criterion questions:

1. Who is doing the learning?
2. Is the learner doing or producing something?
3. Under what conditions is the learner-behavior to occur?
4. What is the mastery criterion?

ORGANIZATION OF THE IPI MATHEMATICS CONTINUUM

The teacher describes the IPI Mathematics Continuum with the use of a chart of the Continuum:

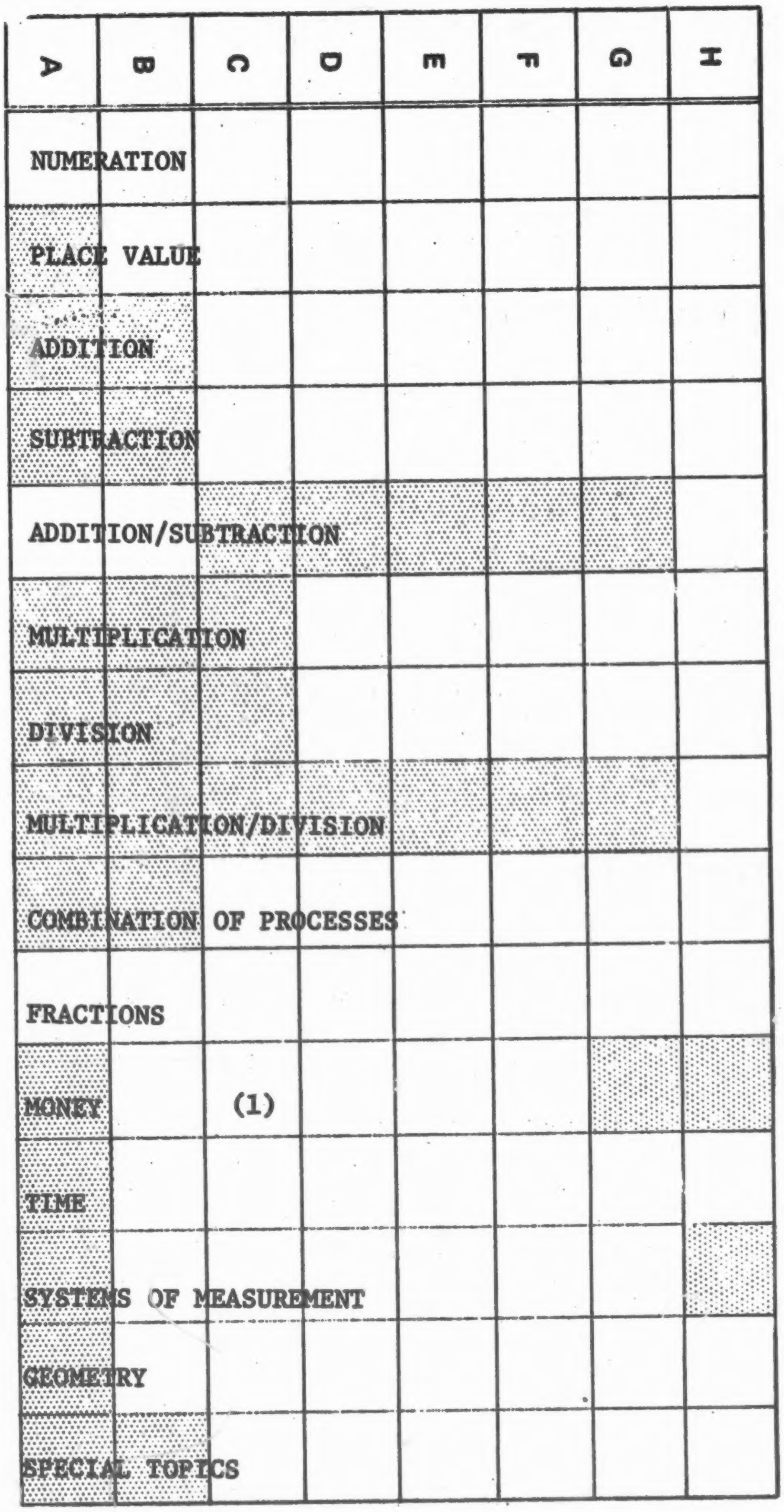
1. Locates and names the areas, levels, units and skills on the Continuum.
2. Describes the Mathematics Continuum, its areas, levels and skills in terms of generality and specificity, and in terms of 4 selected criteria of behavioral objectives.
3. Explains the sequence in the Continuum.
4. Lists a given set of units in the order in which they would be studied by a student.

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Work toward 100% mastery.



	A	B	C	D	E	F	G	H
NUMERATION								
PLACE VALUE	▨							
ADDITION	▨	▨						
SUBTRACTION	▨	▨						
ADDITION/SUBTRACTION			▨	▨	▨	▨	▨	
MULTIPLICATION	▨	▨	▨					
DIVISION	▨	▨	▨					
MULTIPLICATION/DIVISION	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES	▨	▨						
FRACTIONS								
MONEY	▨		(1)				▨	▨
TIME	▨							
SYSTEMS OF MEASUREMENT	▨							▨
GEOMETRY	▨							
SPECIAL TOPICS	▨	▨						

Complete the following statements by writing the appropriate answer in the column of blanks provided on the right. Use the graph to find the answers.

1. The levels range from (a)_____ to (b)______ (a)________ (b)________
2. The circled box (1) represents (a)_______. (a)________
3. D Subtraction is (a)________. (a)________
4. Special topics is (a)________. (a)________

Complete the following statements by writing the appropriate answer in the column of blanks provided on the right.

5. Each unit contains behavioral objectives called (a) ____________. (a)____________

6. (a) ____________ are specifically defined in the Continuum. (a)____________

7. At present there are (a) ____________ units in the Continuum. (a)____________

Answer True or False.

8. A student beginning in C Numeration would be expected to have mastered all units in levels A and B. ____________

9. Areas are specifically defined in the Continuum. ____________

10. The units contain different numbers of skills. ____________

ANSWER KEY

PRETEST: Section II: Organization of the IPI Mathematics Continuum (pp. 22-35)

1. A-H

2. unit

3. unit

4. area

5. unit skills

6. objectives

7. 86

8. True

9. False

10. True

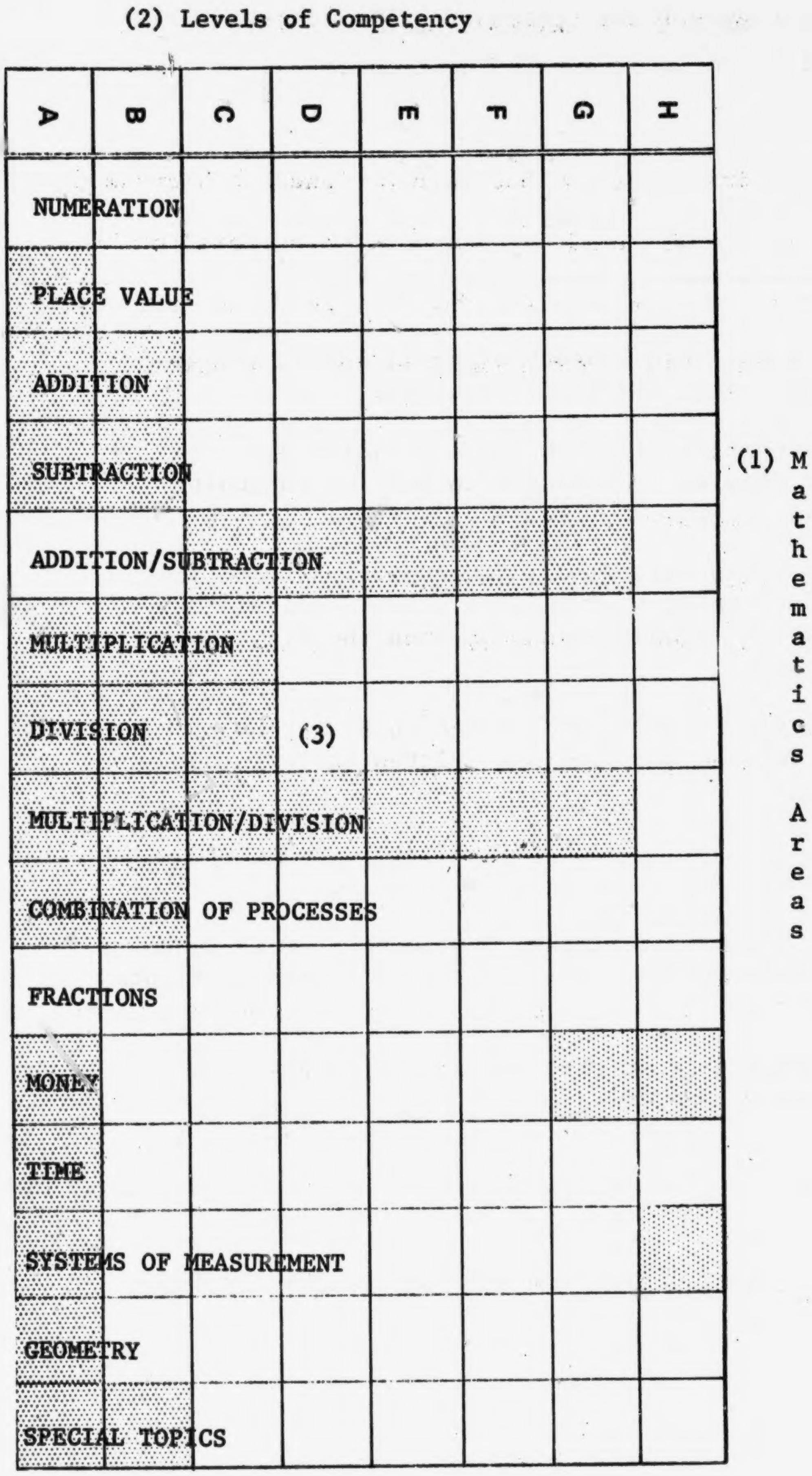
ORGANIZATION OF THE IPI MATHEMATICS CONTINUUM

The IPI Mathematics Continuum has been designed to provide the teacher with a clear set of carefully sequenced behavioral objectives in mathematics. A first step toward using the Continuum is to become familiar with the organization and details of the Continuum.

There are four diagrams in this section:

1. Organization of IPI Mathematics Continuum
2. Sample Unit from IPI Mathematics Continuum
3. IPI Mathematics Continuum (Area Objectives)
4. IPI Mathematics Continuum (Sequence of Units and Skills)

Examine each diagram and explanatory text to learn about the IPI Mathematics Continuum.


(2) Levels of Competency
A
B
C
D
E
F
G
H
NUMERATION
PLACE VALUE
ADDITION
SUBTRACTION
ADDITION/SUBTRACTION
MULTIPLICATION
DIVISION
(3)
MULTIPLICATION/DIVISION
COMBINATION OF PROCESSES
FRACTIONS
MONEY
TIME
SYSTEMS OF MEASUREMENT
GEOMETRY
SPECIAL TOPICS
(1) Mathematics Areas

(1) The IPI Mathematics Continuum for kindergarten through grade six is organized into fifteen broad areas from numeration to special topics.

(2) Each area has a possible range of eight levels (A-H) of increasing competency and complexity. These levels approximate traditional grade levels.

(3) The boxes formed by the intersection of an area of mathematics and level of competency are units of behavioral objectives or skills the student must master at that point in the Continuum (refer to Figure 2).

Figure 1: Organization of IPI Mathematics Continuum

The unit circled in Figure 1 and presented below in Figure 2 is a set of Division skills on Level D. The unit contains seven skills.

Level D

Division

1. Divides a set into subsets of equal number to solve simple grouping (division) problems.
2. Uses known multiplication facts to solve division problems related to products to 5 x 10, including 0 and 1.
3. Uses the terms "dividend", "divisor", and "quotient" to label parts of a division problem. Selects division as the proper operation when the division box is used.
4. Solves division problems through combinations of 50÷5 to demonstrate oral and written mastery (no pictures).
5. Divides 2, 3, 4, and 5 by 1 and into 0 and divides a number by itself.
6. Fills in frames for missing quotients. Divisors to 5, dividends to 50, also divisors to 9 when quotients are 5 or less.
7. Solves one-step word problems requiring division facts through 5 x 10.

Figure 2: Sample Unit from IPI Mathematics Continuum

EXERCISE

Summary Sheet for Figures 1 and 2

1. The Continuum has been analyzed and designed in terms of a sequence of ________________.

2. The content of the Continuum has been divided into ____________________________.

3. The levels of increasing competency run from ______________.

4. A ______________________ in the Continuum is defined as set of behavioral objectives or skills of a given area at a specified level of competency.

5. Numeration is ______________________.
   Special Topics is _____________________.
   F-Time is ______________.
   The highest level of competency is ______________.

6. The behavioral objectives within a unit are also called ______________________________.

7. Criteria of behavioral objectives and D-Division skills. Fill in criteria matching the skill column.

	Criteria	D-Division Skills
1.	______________________?	All 7 skills describe the student doing something.
2.	______________________?	All 7 skills use action words as solve, fill-in, lable, etc.
3.	______________________?	Skill #3 tells us behavior is to occur when division box is used. The other skills do not meet this criterion. In this case, the teacher meets this criterion through the prescription.
4.	______________________?	Students must score 85% or higher on all skill and unit tests in order to move on.

END OF EXERCISE

EXERCISE

(for 1st and 2nd grade teachers)

The following units from Level B are frequently used on your grade level. Apply the four Criteria of Behavioral Objectives in examining them. Discuss your interpretations with the other 1st and 2nd grade teachers. Ask the instructor for help if you need any.

B - Money

1. When presented with the coins (or pictures of) a penny, nickel, and dime, child selects the requested coin.
2. Matches coins; pennies and nickels (or pictures of them) with their numerical value or with value in other ocins.
3. Responds to word "quarter" by selecting the correct coin (or picture) from a collection of coins.
4. Finds the value of collections of pennies and nickels and responds to use of "¢" sign. Sums to 12¢.

B - Time

1. Reads numerals to 12 on a clock face (oral).
2. Writes numerals to twelve on a clock face.
3. States that it is after ____o'clock and before ____o'clock when presented with a clock face which has only an hour hand pointing between any two numerals on the face. The students should be able to do this very quickly so that a timed test should be used.

B - Systems of Measurement

1. Locates when directed, the following: high, low, near, far; nearest, farthest; big, little; more, less; short, long; smaller, larger; taller, shorter; longer, shorter; right, left.
2. States that a ruler and yardstick are used for measuring and identifies each on request.

3. Says that ruler divisions are inches and that three one-foot rulers are the same length as one yardstick.

4. Identifies "one dozen" and "one-half dozen" objects.

B - Geometry

1. Locates the following figures on request: circle, square, triangle, and rectangle. Responds to these words when used in directions.

2. Reproduces a circle, square, triangle, and rectangle from memory.

END OF EXERCISE

EXERCISE

(for 3rd and 4th grade teachers)

The following units from Level D are frequently used on your grade level. Apply the four Criteria of Behavioral Objectives in examining them. Discuss your interpretations with other 3rd and 4th grade teachers. Ask the instructor for help if you need any.

D - Numeration

1. Reads and writes numbers to 1000. Reads and writes short sequences of numbers from any starting point forward or backward.
2. Completes patterns for skip counting by 3's from any starting point to 1000, forwards or backwards.
3. (D-2) Completes patterns for skip counting by 4's from any starting point to 1000, forwards or backwards.
4. (D-3) Converts pure decimal fractions of tenth to common fractions and words, and vice versa. Fills in missing pure decimal tenths on a number line.
5. (D-3) Converts pure decimal fractions through hundredths to fractions and words, and vice versa.

D - Place Value

1. Identifies the place value of the units, tens, hundreds, and thousands digit in numbers to 1000 by writing the place value in words or numberals when given the digit and by giving the digit when the place value is specified.
2. (D-1) Places or between two numbers to 1000.
3. (D-1) Writes the number which comes "before" or "after" a given number, or "between" two numbers for numbers to 1000.
4. (D-2) Writes numberals in expanded notation (up to 1000) in words or numerals with a + sign.
5. (D-2) Regroups or renames numbers in groups of hundreds, tens, and ones appropriate for borrowing and carrying.

EXERCISE - CONTINUED

(for 3rd and 4th grade teachers)

6. (D-3) Solves addition and subtraction problems related by multiples of ten for comibnations not yet studied.

7. (D-4) Writes pure decimal fractions inexpanded notation using words, common fractions or decimal fractions.

8. (D-4) Identifies place value of digits of pure decimal fractions to hundredths by writing the place value in words, common fractions or decimal fractions when given the digit.

9. (D-4) Fills place value chart for pure decimal fractions to hundredths.

END OF EXERCISE

EXERCISE

(for 5th and 6th grade teachers)

The following units from Level F are frequently used on your grade level. Apply the four Criteria of Behavioral Objectives in examining them. Discuss your interpretations with other 5th and 6th grade teachers. Ask the instructor for help if you need any.

F - Numeration

1. Rounds numbers to nearest thousands, ten thousands, and millions for estimating answers in problem form. Rule: rounds up from 5.
2. Writes the standard numeral for a 5, 6, or more place number written in words and writes a 5, 6, or more place number in words.
3. Locates the prime numbers to 100 on a chart by the definition that: "A prime number in one which has exactly two different whole-number factors."

F - Place Value

1. Completes a place value chart for 4 or more digit numbers. A sample form is to be given for all exercises.
2. (F-3) Writes 10 multiplied by itself a number of times as 10 to a power, for all positive powers of 10 (not to include zero). Identifies the base and the exponent or power of a term.
3. Writes a number with one non-zero digit as a whole number less than 10 times a power of 10 - i.e., 7×10^3.
4. Writes a number from 1 through 9 multiplied by itself a number of times in exponential form.
5. (F-2,5) Reads and charts decimal numbers to millionths with whole number parts to ten. Sample to be given for all exercises.

F - Addition

1. Adds with carrying for four or more place numbers with more than two addends.

EXERCISE - CONTINUED

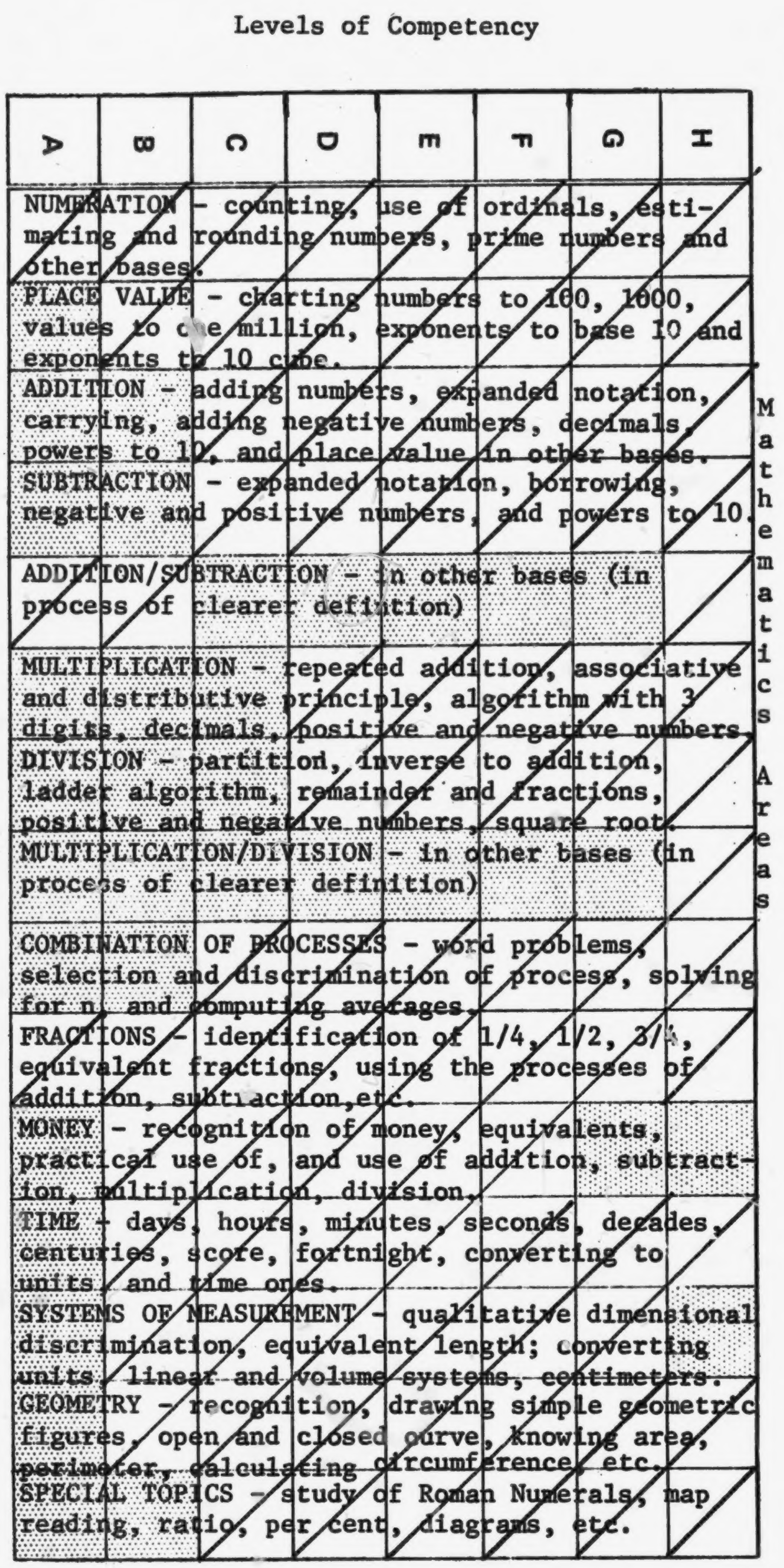
(for 5th and 6th grade teachers)

2. Adds two or more numbers with whole number parts and decimals to the millionths. Addends need not have same number of digits. Maximum of 7 digits.

F - Subtraction

1. Subtracts two decimal numbers with whole number parts and decimals to the millionths. Terms need not have same number of digits. Maximum of 7 digits.

END OF EXERCISE



NUMERATION - counting, use of ordinals, estimating and rounding numbers, prime numbers and other bases.

PLACE VALUE - charting numbers to 100, 1000, values to one million, exponents to base 10 and exponents to 10 cube.

ADDITION - adding numbers, expanded notation, carrying, adding negative numbers, decimals, powers to 10, and place value in other bases.

SUBTRACTION - expanded notation, borrowing, negative and positive numbers, and powers to 10.

ADDITION/SUBTRACTION - in other bases (in process of clearer definition)

MULTIPLICATION - repeated addition, associative and distributive principle, algorithm with 3 digits, decimals, positive and negative numbers.

DIVISION - partition, inverse to addition, ladder algorithm, remainder and fractions, positive and negative numbers, square root.

MULTIPLICATION/DIVISION - in other bases (in process of clearer definition)

COMBINATION OF PROCESSES - word problems, selection and discrimination of process, solving for n, and computing averages.

FRACTIONS - identification of 1/4, 1/2, 3/4, equivalent fractions, using the processes of addition, subtraction, etc.

MONEY - recognition of money, equivalents, practical use of, and use of addition, subtraction, multiplication, division.

TIME - days, hours, minutes, seconds, decades, centuries, score, fortnight, converting to units, and time ones.

SYSTEMS OF MEASUREMENT - qualitative dimensional discrimination, equivalent length; converting units, linear and volume systems, centimeters.

GEOMETRY - recognition, drawing simple geometric figures, open and closed curve, knowing area, perimeter, calculating circumference, etc.

SPECIAL TOPICS - study of Roman Numerals, map reading, ratio, per cent, diagrams, etc.

Figure 3: IPI Mathematics Continuum (Area Objectives)

Each of the fifteen areas of IPI mathematics is rather broadly defined. However, each area has been analyzed into specific behavioral objectives or skills, and grouped into units of increasing competencies. The boxes with the diagonal lines represent the units of skills existing in each area. For example, *numeration* contains skills at every level of difficulty, while *multiplication* and *division* each start with units of skills at Level D. Examine the chart to see how the units of skills are distributed through the Continuum.

Levels of Competency

Mathematics Areas

A	B	C	D	E	F	G	H	
1 / 12	4 / 10	12 / 8	23 / 5	36 / 8	49 / 3	62 / 8	74 / 6	Num.
	5 / 3	13 / 5	24 / 9	37 / 7	50 / 5	63 / 2	75 / 1	P.V.
		14 / 5	25 / 8	38 / 6	51 / 2	64 / 3	77 / 3	Add.
		15 / 4	26 / 5	39 / 3	52 / 1	65 / 3	78 / 1	Sub.
2 / 3	6 / 10						76 / 6	+ & - Other bases
			27 / 8	40 / 11	53 / 10	66 / 6	80 / 3	Mult.
			28 / 7	41 / 7	54 / 8	67 / 5	81 / 5	Div.
							79 / 5	x & ÷ Other bases
		16 / 6	29 / 5	42 / 7	55 / 4	68 / 5	82 / 5	COP
3 / 3	7 / 2	17 / 4	30 / 5	43 / 6	56 / 14	69 / 5	83 / 1	Frac.
	8 / 4	18 / 4	31 / 6	44 / 3	57 / 2			M.
	9 / 3	19 / 2	32 / 10	45 / 9	58 / 5	70 / 3		T.
	10 / 4	20 / 3	33 / 5	46 / 7	59 / 3	71 / 2		SOM
	11 / 2	21 / 2	34 / 3	47 / 9	60 / 10	72 / 7	84 / 9	Geom.
		22 / 1	35 / 3	48 / 3	61 / 5	73 / 4	85 / 3	S.T.

Figure 4: IPI Mathematics Continuum (Sequence of Units and Skills)

The units in IPI mathematics are carefully sequenced. The sequence of units is presented in Figure 4. The numbers in the upper left-hand corner of each unit give the numerical order in which the units are mastered. Mastery of each unit is generally dependent upon mastery of the preceding unit. For example, if a student is working in B-Frac. (Unit 7), he has mastery of Units 1-6. After mastering B-Frac. (Unit 7), he will move into the next unmastered unit.

The numbers in the lower right-hand corner of each unit indicate the number of skills to be mastered. For example, D-Num. (Unit 23) contains five skills.

Figure 4 indicates there are 85 units and 438 skills in the Continuum to date. The Continuum is periodically reviewed and revised. Feedback from IPI teachers helps RBS and LRDC in these revisions of the mathematics program.

EXERCISE

Summary Sheet for Figure 3 & 4

1. ____________________ are broadly defined in the Continuum.

2. The ____________________ are carefully sequenced from 1 to 86.

3. A student who is ready to start work on the skills in F-Addition must have mastered all the skills in Units 1 to ____________________.

4. The number of units in TIME is ______________. They run from Level ____________________ to ____________________.

5. The units contain different numbers of ____________________.

6. (See Chart on following page.)

Levels of Competency

Mathematics Areas

	A	B	C	D	E	F	G	H
Num.	X	X	X	23/5	36/8	49/3	62/8	74/6
P.V.	▨	X	X	24/9	37/7	50/5	63/2	75/1
Add.	▨	▨	14/5	25/8	38/6	51/2	64/3	77/3
Sub.	▨	▨	X	26/5	39/3	52/1	65/3	78/1
+ & - Other bases	2/3	6/10	▨	▨	▨	▨	▨	76/[illegible]
Mult.	▨	▨	▨	27/8	40/11	53/10	66/6	80/3
Div.	▨	▨	▨	28/7	41/7	54/8	67/5	81/5
x & ÷ Other bases	▨	▨	▨	▨	▨	▨	▨	79/5
COP	▨	▨	X	29/5	42/7	55/4	68/5	82/5
Frac.	X	X	17/4	30/5	43/6	56/14	69/5	83/1
M.	▨	X	X	31/6	44/3	57/2	▨	▨
T.	▨	X	X	32/10	45/9	58/5	70/3	▨
SOM	▨	X	X	X	46/7	59/3	71/2	▨
Geom.	▨	X	X	X	47/9	60/10	72/7	84/9
S.T.	▨	▨	X	X	48/3	61/5	73/4	85/3

6. A student shows he has mastered all the x'd in units on this chart. He should master all the units in one level before working through successive units. The student, represented on this chart, would master the units in this order:

Unit No.	Name	No. of Skills
14	C-Add.	5
17	C-Frac.	4
39	E-Sub.	3

POSTTEST: Section II: Organization of the IPI Mathematics Continuum

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

	A	B	C	D	E	F	G	H
NUMERATION								
PLACE VALUE	▨							
ADDITION	▨	▨						
SUBTRACTION	▨	▨						
ADDITION/SUBTRACTION			▨	▨	▨	▨	▨	
MULTIPLICATION	▨	▨	▨					
DIVISION	▨	▨	▨					
MULTIPLICATION/DIVISION	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES	▨	▨						
FRACTIONS								
MONEY	▨						▨	▨
TIME	▨							
SYSTEMS OF MEASUREMENT	▨							▨
GEOMETRY	▨							
SPECIAL TOPICS	▨	▨						

Mathematics Continuum

Complete the following statements by writing the appropriate answer in the column of blanks provided on the right. Use the graph to find the answers.

1. The areas range from (a)______ to (b)_____. (a)______

(b)______

2. (a)______ is the box formed by the intersection of an area of mathematics and level of competency. (a)______

3. C-Fractions is (a)________. (a)______

4. Multiplication is (a)________. (a)______

Complete the following statements by writing an appropriate answer in the column of blanks provided on the right.

5. (a) _______________ are broadly defined in the Continuum. (a)_______________

6. The units contain different numbers of (a) _________________. (a)_______________

7. At present there are (a) ___________ skills in the Continuum. (a)_______________

Answer True of False

8. Generally to master a unit a student must have mastered the preceding units. _______________

9. Multiplication contains skills at every level of difficulty. _______________

10. Each unit contains five skills. _______________

ANSWER KEY

POSTTEST: Section II: Organization of the IPI Mathematics Continuum (pp. 22-35)

1. A-H
2. unit
3. unit
4. area
5. areas
6. skills
7. 438
8. True
9. False
10. False

BEHAVIORAL OBJECTIVES AND THE IPI MATHEMATICS CONTINUUM

SUMMARY SHEET

A behavioral objective describes an overt activity or observable product executed by the learner under a specific set of conditions with a stated degree of mastery.

Criterion questions for a behavioral objective:

1. Who is doing the behaving?
   (Learner)
2. Is the learner doing or producing something?
   (Overt behavior or observable product)
3. Under what conditions is the behavior to occur?
   (Situational factors that will elicit the behavior)
4. What is the mastery criterion?
   (Minimum acceptable competency)

IPI Mathematics Continuum is a carefully sequenced set of behavioral objectives in mathematics organized into areas of mathematics and levels of competency.

There are fifteen Mathematics Areas or subdivisions of the content in the Continuum (Numeration, Place Value, etc.) Each Area has a possible range of eight Levels of Competency (A-H). A particular Level of Competency in any one Area is a Unit (D-Numeration, A-Add., etc.) A Unit is composed of a set of Skills (D-Multiplication has eight Skills, G-Fractions has five Skills, etc.) A student works on Units he has yet to master in the order in which they are sequenced in the Continuum.

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TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 3

Diagnosis of Student Achievement

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

SP002419

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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DIAGNOSIS OF STUDENT ACHIEVEMENT

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DIRECTIONS FOR GUIDING STUDENTS THROUGH CONTINUUM 345

This volume introduces the role of achievement testing in individualized instruction. In addition, the IPI achievement tests are described in detail. After completing this volume, you will be able to administer the IPI tests and use the test results in prescription writing.

INTRODUCTION

The teacher:

1. Describes the source of good achievement tests or test items.
2. Lists the four uses of achievement tests in classroom instruction.
3. Describes placement tests in terms of sampling the curriculum and in terms of use.
4. Describes pretests in terms of sampling and in terms of use.
5. Describes curriculum embedded tests in terms of sampling and in terms of use.
6. Describes posttests in terms of sampling and in terms of use.

INTRODUCTION

Achievement tests offer us a systematic way of looking at a student's behavior. Administrators, teachers, guidance counselors and many others all employ test results in some way for the general purpose of improving instruction. The kinds of evaluation each group seeks answer different questions. Some ask, "How good are the schools in the Nation?" This is national assessment. Others ask the question, "How does my school district compare with similar districts?", to get information for the community and Board of Education. A question such as, "What has been the trend for the last five years in pupil achievement of social studies", helps in identifying areas requiring improvement.

These questions are very different from the kinds asked by the classroom teacher. Measuring educational outcomes and comparing the results with regional norms or national averages are not very usefule to a teacher in a classroom with twenty-eight very different students.

The teacher asks:

1. What can this student do?
2. What are the things he cannot do?
3. How is he progressing in his assigned work?
4. What difficulties is he encountering in his assignment?
5. What is the evidence that he will experience success in his next assignment?
6. Is he ready to learn something new?

The student himself uses testing to answer his questions:

1. What am I supposed to learn?
2. How am I doing?
3. What is giving me trouble?
4. What help must I ask for?
5. Can I do this as well as everybody else?

Answers to these questions can be extraordinarily helpful to the teacher in guiding the educational development of the student and in measuring the effectiveness of instruction. Students are motivated by the answers which frequently function to establish a readiness and receptivity to learning something new. This information also helps the student increase his independence in working towards a well defined target.

It is obvious that the test instruments used for national assessment, district comparisons, and trend studies are completely irrelevant to the questions of the teacher and student. These questions can only be answered by a work sample.

A classroom test is a work sample of all the behaviors the student must master in a given curriculum or a part of the curriculum. Student performance on this sample enables the teacher to generalize concerning progress and mastery in the portion from which the sample is drawn. Before such generalization can be made, the classroom test must constitute a fair and representative sample of behaviors to be mastered. Unless this is the case, the test will not answer questions about student progress. Also, it may well leave the students thoroughly confused about what they are to learn, what they are learning, and if they have learned at all.

No tests dictate what to teach. Instead, our learning goals, instructional objectives, behavioral objectives (whatever they may be called) tell us what we want to test. Each behavior to be mastered demands a suitable test or test items especially designed to measure the behavior.

The actual writing and construction of tests are not easy tasks. They require skill and practice. These skills will not be covered in this discussion. If you are interested in refining your techniques in the construction of a classroom test, a kit called Making Your Own Test,consisting of filmstrips, records and worksheets, is avialable. Ask the instructor for the materials.

Once this matching of work samples to behaviors is done, the classroom test becomes a powerful tool for diagnosing the learning needs of the students. The teacher then can place the students accurately in the curriculum, analyze the specific skills he needs to learn, monitor his progress, and determine his mastery. These four uses of the classroom test give the teacher a basis for choosing specific instructional resources to help the student master the desired behaviors.

IPI uses achievement testing in these same four ways. IPI has developed four kinds of achievement tests that enable the teacher:

1. To place the student in each area of the Mathematics Continuum at a particular level of competencey which will serve as the starting point for finer, more discriminating diagnosis. These tests are called Placement Tests.

2. To analyze the specific mathematics skills the student has yet to master within a particular unit. These tests are called Unit Pretests.

3. To monitor the student's progress as he works on this prescription and moves from skill to skill within a unit. These tests are called Curriculum Embedded Tests or CET's.

4. To determine the student's mastery of all the skills in the unit. These tests are called Unit Posttests.

We will look at each of these IPI tests separately, learn what they are and how to use them.

IPI PLACEMENT TESTS

IPI PLACEMENT TESTS

The teacher:

7. Describes IPI Placement Tests in terms of use and organization

8. Indicates on a Continuum chart those units that have Placement Tests.

9. Uses the Placement Tests booklets to describe the contents and sampling of the Placement Tests.

10. Describes the procedures for IPI placement testing:

    a, Selecting a starting level for placement testing.
    b. Administering Placement Tests.
    c. Scoring and filling in Profile sheets.
    d. Making decisions on the basis of Placement Test scores related to the placement of the student in the Continuum and additional testing.
    e. Recording decisions about placement testing on the Profile sheet.
    f. Ending placement testing.

11. Selects and assigns units in the Mathematics Continuum in a proper sequence from a placement Profile and Continuum chart.

PRETEST: Section I: IPI Placement Tests

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Use the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Answer true (T) or false (F):

1. A well-constructed test of achievement samples the behaviors the student is to learn. ________
2. IPI Placement Tests give a detailed picture of student-achievement in the units tested. ________
3. IPI Placement Tests are used to enter a student into the Mathematics Continuum. ________
4. In IPI the scores resulting from placement testing are used to assign students to groups formed upon the basis of achievement levels. ________
5. IPI Provides the teacher with Placement Tests that cover every unit in the Continuum. ________
6. In IPI a student continues placement testing until he fails one complete level. ________
7. IPI tests are scored by aides who also enter the scores and percentages on the student Profile sheet. ________
8. Placement testing must be completed before a teacher can start the student working in the Continuum. ________
9. The teacher enters the placement levels for each student on the student's Profile sheet. ________

What decisions would you make about placement and placement testing in these instances of IPI Placement Test scores? Select the best answer below each item. (Use attached Continuum chart to help you.) Assume this is the first placement test score.

1. A student scores 82% in B-Num: ________________
   a. Place in B-Num.
   b. Test in C-Num.
   c. Retest in B-Num.
   d. Insufficient information

2. A student scores 59% in E-Add: ________________
   a. Place in E-Add.
   b. Test in F-Add.
   c. Test in D-Add
   d. Insufficient information.

3. A student scores 16% in F-Frac: ________________
   a. Place in F-Frac.
   b. Test in E-Frac.
   c. Test in F-Div.
   d. Insufficient information.

4. A student scores 90% in F-Time: ________________
   a. Place in F-Time.
   b. Test in G-Time.
   c. Place in G-Time.
   d. Insufficient information.

5. A student scores 70% in B-Add.-Sub: ________________
   a. Place in B-Add.-Sub.
   b. Place in B-Add.-Sub, C-Add, and C-Sub.
   c. Test in C-Add, and C-Sub.
   d. Insufficient information.

Level Placement Tests

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒							☒
PLACE VALUE (02)	▨							☒
ADDITION (03)	▨	▨						☒
SUBTRACTION (04)	▨	▨						☒
ADDITION/ SUBTRACTION (34)	☒		▨	▨	▨	▨	▨	☒
MULTIPLICATION (05)	▨	▨	▨					☒
DIVISION (06)	▨	▨	▨					☒
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	☒
COMBINATION OF PROCESSES (07)	▨	▨						☒
FRACTIONS (08)	☒							☒
MONEY (09)	▨					☒	▨	▨
TIME (10)	▨							☒
SYSTEMS OF MEASUREMENT (11)	▨							▨
GEOMETRY (12)	▨							☒
SPECIAL TOPICS (13)	▨	▨	☒	☒	☒	☒	☒	☒

▨ = No existing units

☒ = No Placement Test for this unit

Reference Chart: IPI Mathematics Continuum Placement Tests

ANSWER KEY

PRETEST: Section III: IPI Placement Tests (pp. 14 - 87)

True-False:

1. T
2. F
3. T
4. F
5. F
6. F
7. T
8. F
9. T

Select best answers:

1. b
2. a
3. b
4. b
5. b

IPI PLACEMENT TESTS

Placement testing is extremely important to the initial entry of the student into the sequence of the Continuum. It determines his status in the sequence and it is the first step in starting instruction "where he is". Unlike group instruction which uses placement testing to match a student's competencies to the various units in the Continuum.

This section will answer the following questions about IPI Placement Tests:

1. What are IPI Placement Tests?
2. What are IPI Placement Tests used for?
3. How many IPI Placements are there for the Mathematics Continuum?
4. How are IPI Placement Tests labeled?
5. What does each Level of Placement Tests consist of?
6. Why are Placement Tests composed of a limited sample?
7. What are the procedures followed in IPI Placement testing?

What are IPI Placement Tests?

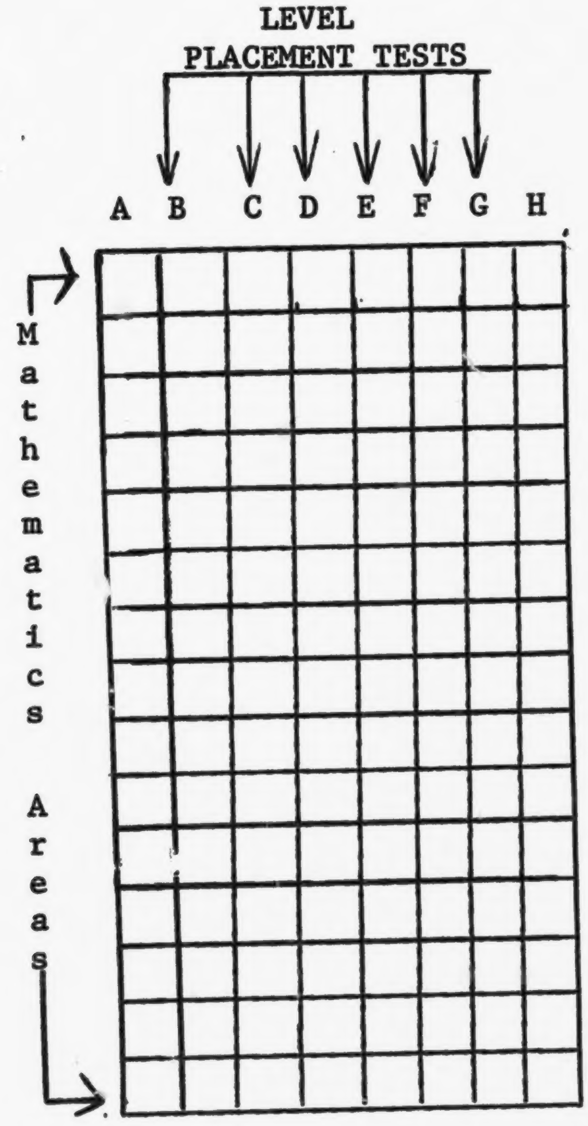
IPI Placement Tests consist of a battery of diagnostic instruments that give a measure of gross achievement in the entire IPI Mathematics Continuum by means of a fairly small sampling of the Continuum.

What are IPI Placement Tests used for?

The Placement Tests are usually administered in the beginning of the school year to locate the student at a level of competency in each area of the Continuum. These Tests are used as a broad inventory of what the student can do (and not do) in the Continuum.

How many Placement Tests are there for the IPI Mathematics Continuum?

There are six Placement Tests in IPI Mathematics. There is a Placement Test for each of Levels B through C inclusively.



Level A does not have Placement Tests. Level A has only three units (Num., Add., Frac.) or a total of 13 skills. Any entering student who cannot succeed or place in any of the tests on Level B is automatically placed in the area on Level A without A placement testing. Level H does not have Placement Tests. Level H is the last fully-developed Level in the Continuum. Any entering student who succeeds in an area on Level G is automatically placed in the area on Level H without Level H placement testing.

How are the Placement Tests labeled?

The Placement Tests are labeled by the Levels they test.

COMPLETE THE FOLLOWING LABELING:

The six Placement Tests are:

1. Level B ______ Placement Tests
2. ______ Placement Tests
3. ______ Placement Tests
4. ______ Placement Tests
5. ______ Placement Tests
6. ______ Placement Tests

What does each Level of Placement Tests consist of?

Each Level of Placement Tests usually consists of a limited sampling of each Area existing at that Level. Each Level of Placement Tests is best described by using the following IPI record sheet called a Mathematics Placement Score Profile to illustrate our answer.

Briefly, the Profile sheet summarizes one student's performance on Placement Tests in the form of Test scores filled in by the clerical aide.

The Profile does not contain three Areas normally listed in the Continuum. They are Addition and Subtraction in Other Bases, Multiplication and Division in Other Bases, and Special Topics. Students are not placement tested in these Areas but are automatically placed in them at whatever Level each starts. In the case of Special Topics, this occurs on Level C.

At this time, the Profile sheet will help us look at each Level of Placement Tests. →

Use the Profile sheet to follow:

Level B Placement Tests sample all Units in column B except for the unit boxes containing the X's. There are no Units of skills for these Areas on Level B. Note that Units B-Addition and B- Subtraction are combined together for placement testing only on Level B (indicated by asterisks).

Level C Placement Tests sample all Units in column C except for the unit boxes containing X's. There are no Units of skills for these Areas on Level C.

Level D Placement Tests sample all Units in Column D.

Level E Placement Tests sample all Units in column E.

Level F Placement Tests sample all Units in Column F except F-Money. Since F-Money is the highest Level in the Area, a student is automatically placed in it if he exceeds E-Money. As a rule, placement in the highest Level of any Area is automatic upon passing the Placement Test of the next lower Level.

Level G Placement Tests sample all Units in column G except for G-Money (no Unit exists here), G-Time, and G-Systems of Measurement (not tested since it is the highest Level of the Area).

Level H has no Placement Tests since it is the highest fully-developed Level of the existing Areas. Placement in these Units is automatic if Level G Placement Tests are passed.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME ____________________ STUDENT NUMBER ______________

SCHOOL STAMP ____________ GRADE ____________ ROOM ____________

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.							X	
		SCORE								
		%								
PLACE VALUE (02)		MAX. PTS.							X	
		SCORE								
		%								
ADDITION (03)		MAX. PTS.	▨						X	
		SCORE	▨ ↓							
		%	▨							
SUBTRACTION (04)		MAX. PTS.	▨						X	
		SCORE	▨							
		%	▨							
ADDITION/ SUBTRACTION (34)		MAX. PTS.	BOTH	▨	▨	▨	▨	▨	X	
		SCORE	TESTED	▨	▨	▨	▨	▨		
		%	HERE	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨						X	
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨						X	
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨	X	
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨						X	
		SCORE	▨							
		%	▨							
FRACTIONS (08)		MAX. PTS.							X	
		SCORE								
		%								
MONEY (09)		MAX. PTS.					X	▨	▨	
		SCORE						▨	▨	
		%						▨	▨	
TIME (10)		MAX. PTS.						X	X	
		SCORE								
		%								
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.						X	▨	
		SCORE							▨	
		%							▨	
GEOMETRY (12)		MAX. PTS.							X	
		SCORE								
		%								

X= NO TESTS

Why are Level Placement Tests a limited sample?

Placement Tests are usually administered at the beginning of the school year to all students or to students entering the school during the school year. They are intended only to locate the student in the Areas of the Continuum. Therefore, Placement Tests test the most representative skill(s) in the Units. They do not test every skill in a Unit. As an example, the following tabulation shows how Level D Placement Tests are constructed:

Units	Number of Skills in Unit	Skill(s) Tested
D-Numeration	5	2,3,4,5
D-Place Value	9	4,7,9
D-Addition	8	7,8
D-Subtraction	5	4,5
D-Multiplication	8	3,4,8
D-Division	7	5,6,7
D-Combination of Processes	5	5
D-Fractions	5	3,4
D-Money	6	4,5
D-Time	10	7,9,10
D-Systems of Measurement	5	3,4,5
D-Geometry	3	1,2,3

Level D Placement Tests

CHECK THIS TABLE WITH THE IPI LEVEL D PLACEMENT TEST BOOKLET THAT FOLLOWS.

EXAMINE THE OTHER IPI PLACEMENT TEST BOOKLET (Level B).

ipi MATHEMATICS PLACEMENT TEST

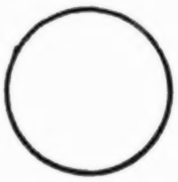
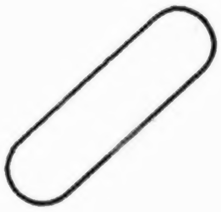
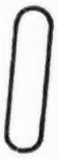
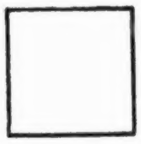
Level B
Geometry (12)

Name ______________________ Date ______________________
Class ______________________ Number ______________________

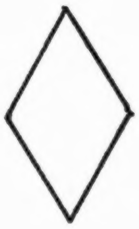
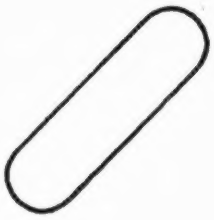
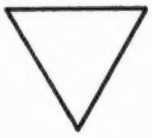
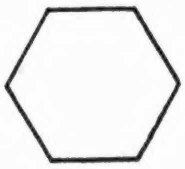
TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

In each row, mark the figure that is named by your teacher.

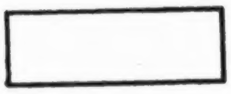
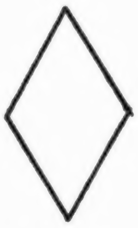
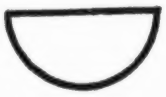
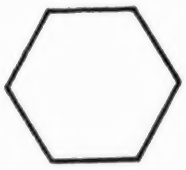
circle

triangle

rectangle

Draw a square.	Draw a triangle.

ipi MATHEMATICS PLACEMENT TEST

Level D
Numeration (01)

Name ____________________ Date ____________

Class ____________________ Number ____________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write the missing numbers.

375	378				

607	611				

Write the decimal numbers for the fractions.

$\frac{7}{10} =$ _____ $\frac{41}{100} =$ _____ $\frac{2}{10} =$ _____

D NUM(01)

ipi MATHEMATICS PLACEMENT TEST

Level D
Place Value (02)

Name ______________________ Date ________________
Class ______________________ Number ________________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Fill in the blanks.

703 = ______ hundreds + ______ tens + ______ ones

982 = ______ hundreds + ______ tens + ______ ones

Write the missing numbers.

$$.59 = \frac{\square}{10} + \frac{\square}{100}$$

Fill in the place-value chart.

	tenths	hundredths
.37		
.75		

ipi MATHEMATICS PLACEMENT TEST

Level D
Addition (03)

Name ______________________ Date ______________
Class ______________________ Number ______________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Add.

$$\begin{array}{r} 342 \\ +\ 199 \\ \hline \end{array} \qquad \begin{array}{r} 666 \\ +\ 77 \\ \hline \end{array} \qquad \begin{array}{r} 103 \\ 493 \\ +\ 104 \\ \hline \end{array}$$

Add.

$$\begin{array}{r} 6 \\ 8 \\ 9 \\ +\ 5 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 9 \\ 8 \\ 3 \\ +\ 7 \\ \hline \end{array}$$

D ADD (03)

ipi MATHEMATICS PLACEMENT TEST

Level D
Subtraction (04)

Name ______________________ Date ______________
Class ______________________ Number ______________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Subtract.

$$\begin{array}{r} 260 \\ -\ 145 \\ \hline \end{array} \qquad \begin{array}{r} 603 \\ -\ 121 \\ \hline \end{array}$$

Subtract.

$$\begin{array}{r} 468 \\ -\ 179 \\ \hline \end{array} \qquad \begin{array}{r} 517 \\ -\ 449 \\ \hline \end{array} \qquad \begin{array}{r} 900 \\ -\ 21 \\ \hline \end{array}$$

D SUB (04)

ipi MATHEMATICS PLACEMENT TEST

Level D
Multiplication (05)

Name ______________________________ Date ____________________
Class ______________________________ Number __________________

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

Multiply.

$$\begin{array}{r} 9 \\ \times 1 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ \times 0 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ \times 5 \\ \hline \end{array} \qquad \begin{array}{r} 0 \\ \times 2 \\ \hline \end{array}$$

Multiply.

$3 \times 7 =$ ______ $4 \times 5 =$ ______
$2 \times 6 =$ ______ $3 \times 4 =$ ______

Solve each problem. Label the answer.

Bob went bowling. In each of three tries, he knocked down 6 pins. How many pins did he knock down in all?

____

How many marbles would five boys have in all if each boy has 4 marbles?

____

ipi MATHEMATICS PLACEMENT TEST

Level D
Division (06)

Name ______________________ Date ______________
Class ______________________ Number ______________

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

Divide.

$0 \div 3 =$ ______ $0 \div 1 =$ ______

$5 \div 5 =$ ______ $4 \div 1 =$ ______

Divide.

$3\overline{)18}$ $4\overline{)28}$ $8\overline{)40}$ $7\overline{)14}$

Solve the problems. Label the answers.

Mother had 12 cookies. She divided them equally among three boys. How many cookies did each boy get?

____

The teacher wanted some children to carry 25 books to the library. If each child could carry only 5 books, how many children were needed to carry all 25 books?

____

ipi MATHEMATICS PLACEMENT TEST

Level D
Combination of Processes (07)

Name ____________________ Date ____________
Class ____________________ Number ____________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write >, <, or = in the circle.

58 minutes − 26 minutes ○ 24 minutes + 43 minutes

2 inches + 7 inches ○ 1 foot − 3 inches

2 × 10¢ ○ 25¢ ÷ 5

3 × 8 ○ 4 × 6

9 ÷ 3 ○ 8 ÷ 4

ipi **MATHEMATICS PLACEMENT TEST**

Level D
Fractions (08)

Name ______________________ **Date** ______________________
Class ______________________ **Number** ______________________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Add.

$$\frac{1}{3} + \frac{1}{3} = \underline{\qquad}$$

$$\begin{array}{r} \frac{1}{4} \\ + \frac{2}{4} \\ \hline \end{array} \qquad\qquad \begin{array}{r} \frac{2}{8} \\ + \frac{3}{8} \\ \hline \end{array}$$

Add. Write the answer as a whole number.

$$\frac{3}{8} + \frac{5}{8} = \underline{\qquad} = \underline{\qquad}$$

$$\frac{7}{6} + \frac{5}{6} = \underline{\qquad} = \underline{\qquad}$$

D FRAC (08)

ipi MATHEMATICS PLACEMENT TEST

Level D
Money (09)

Name ____________________ Date ____________
Class ____________________ Number ____________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write the amounts of money using the dollar sign and decimal point.

Three dollars ________
Two dollars and six cents ________
Seven cents ________

Solve the problems. Write the answers with the dollar sign and decimal point.

Betty bought a ball for 33¢. If she gave the clerk one dollar, how much change did she get?

____

Marilyn bought a doll for 59¢ and a cupcake for 16¢. How much money did she spend?

____

D MON (09)

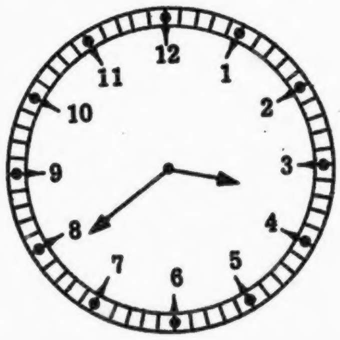
ipi MATHEMATICS PLACEMENT TEST

Level D
Time (10)

Name ______________________
Class ______________________
Date ______________________
Number ______________________

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

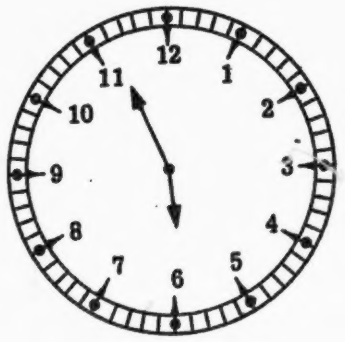
Fill in the blanks.


12
1
2
3
4
5
6
7
8
9
10
11

This clock face shows

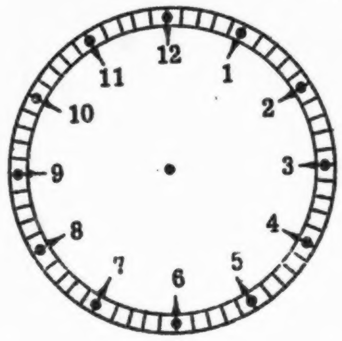
______ minutes after 3 o'clock

______ minutes before 4 o'clock


12
1
2
3
4
5
6
7
8
9
10
11

It is ______ minutes before ______.

Draw the hour and minute hands to show 29 minutes after 10 o'clock.


12
1
2
3
4
5
6
7
8
9
10
11

ipi MATHEMATICS PLACEMENT TEST

Level D
Systems of Measurement (11)

Name ______________________ Date ______________

Class ______________________ Number ______________

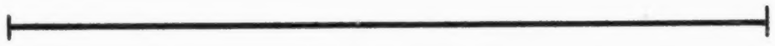
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Solve each problem. Label the answers.

Janice mixed 2 gallons of lemonade for her party. How many pints of lemonade did she mix? ______________

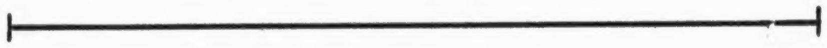
Tom sold 3 quarts and 5 pints of ice cream. How many pints in all did he sell? ______________

Use your ruler to measure the length of the line to the nearest $\frac{1}{2}$ inch.



__________ inches

Measure the length of the line to the nearest $\frac{1}{4}$ inch.



__________ inches

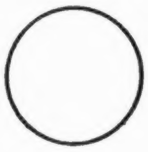
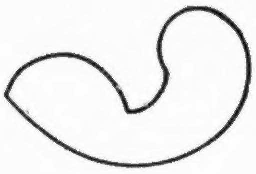
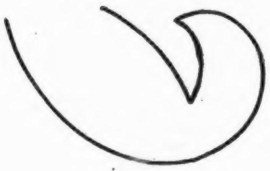
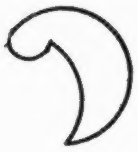
ipi MATHEMATICS PLACEMENT TEST

Level D
Geometry (12)

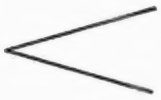
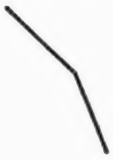
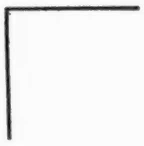
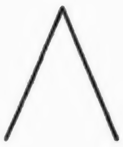
Name ______________________ Date ______________
Class ______________________ Number ______________

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

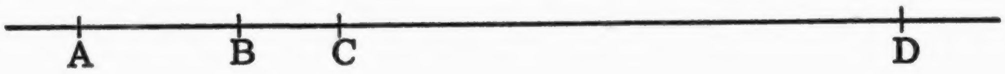
Mark the open curve.

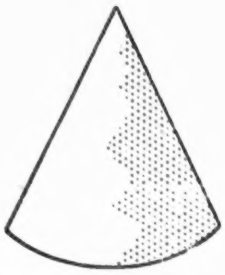
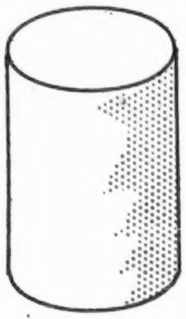
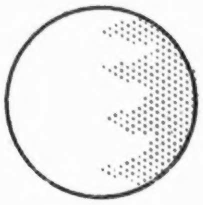
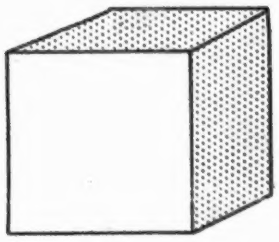
Mark the square corner.

Mark the line segment AB.



Mark the sphere.

LEVEL B PLACEMENT TEST BEGINS ON THIS PAGE. PLEASE EXAMINE IT ALSO.

ipi MATHEMATICS PLACEMENT TEST

Level B
Numeration (01)

Name ______________________ **Date** ______________
Class ______________________ **Number** ______________

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

What number comes just before 2? Write the number. Do the rest of the problems the same way.

Sample
1 , 2

______, 40 ______, 98 ______, 33

What number comes just after 2? Write the number. Do the rest of the problems the same way.

Sample
2 , 3

59, ______ 99, ______

(cont)

ipi MATHEMATICS PLACEMENT TEST

Level B
Numeration (01)
(cont)

Name ____________________ Date ____________________
Class ____________________ Number ____________________

Ring the smallest number in each box.

16 19 15

96 69 99

47 67 57

Write > or < to show whether the first number is greater or lesser.

16 ○ 61

98 ○ 89

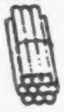
MATHEMATICS PLACEMENT TEST

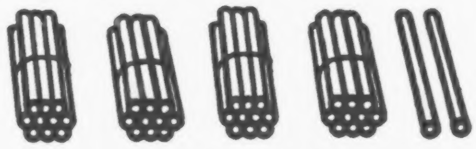
Level B
Place Value (02)

Name ______________________ **Date** ______________

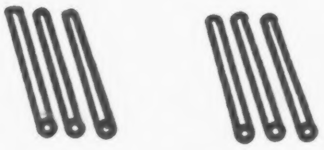
Class ______________________ **Number** ______________

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write the number of tens and ones.
(Each  has ten sticks.)



___ tens and ___ ones



___ tens and ___ ones

Look at the underlined number. Ring tens if the number is in the tens place. Ring ones if the number is in the ones place.

$7\underline{5}$	tens	ones
$\underline{2}0$	tens	ones
$7\underline{0}$	tens	ones

ipi MATHEMATICS PLACEMENT TEST

Level B
Addition/Subtraction (34)

Name ______________________ Date ______________
Class ______________________ Number ______________

TL. PTS.	
13	100%
NO. OF PTS.	%
12	92
11	85
10	77
9	69
8	62
7	54
6	46
5	38
4	31
3	23
2	15
1	8

Add or subtract.

$$\begin{array}{r} 2 \\ +\ 3 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ +\ 3 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ +\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -\ 3 \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ -\ 5 \\ \hline \end{array} \qquad \begin{array}{r} 8 \\ -\ 6 \\ \hline \end{array}$$

3 + 3 = ___   10 − 6 = ___

Write = or ≠ in the circle.

3 + 7 ○ 9   12 − 6 ○ 6

(cont)

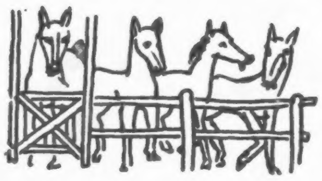
ipi MATHEMATICS PLACEMENT TEST

Level B
Addition/Subtraction (34)
(cont)

Name ______________________ Date ______________
Class ______________________ Number ______________

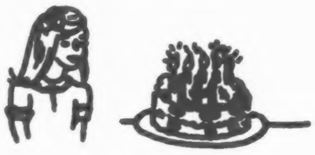
Ring the answer.

Farmer Joe had 1 horse in his corral and 3 horses outside the corral. How many horses did farmer Joe have?



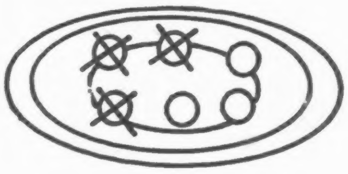
2 3 4 5

Mary had 8 candles lit on her birthday cake. She blew out 3 of them. How many candles were still lit?



3 5 8 9

There were 6 cookies on the plate. Judy ate 3 of them. How many cookies were left?



6 4 3 2

ipi MATHEMATICS PLACEMENT TEST

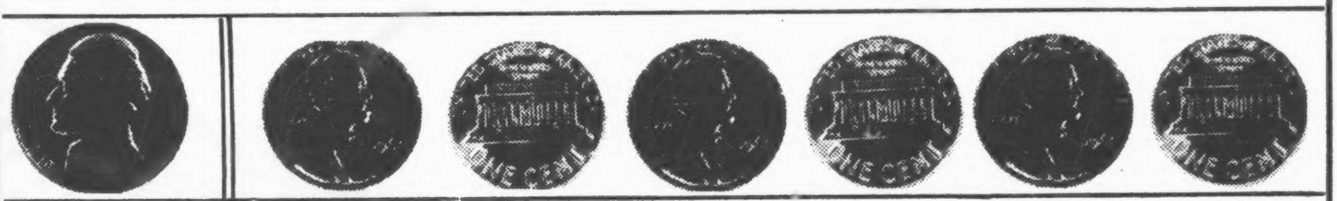
Level B
Money (09)

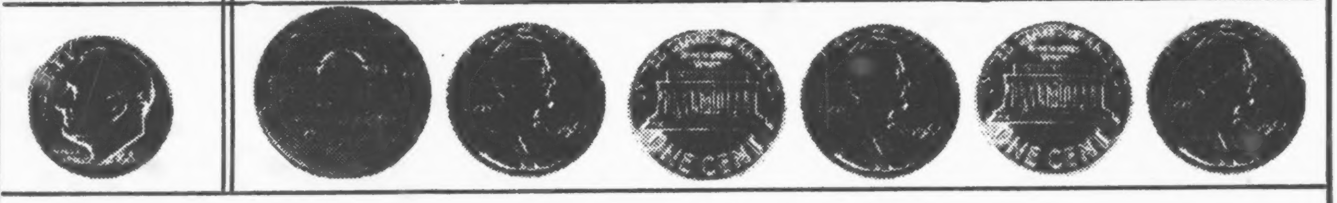
Name ______________________ Date ______________

Class ______________________ Number ______________

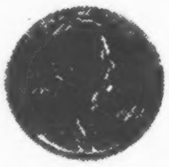
TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

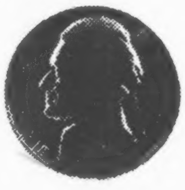
In each row, ring the coins that match the amount in the box.

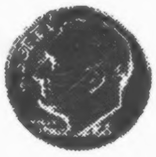


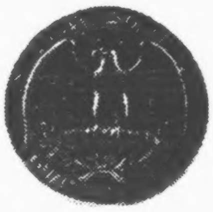


Mark the quarter.



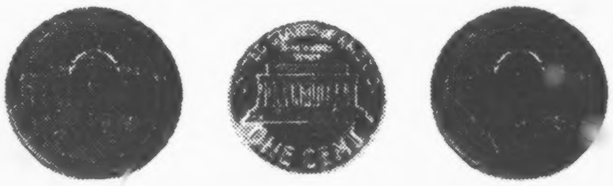






Write the number that tells how much money.

_____¢



_____¢

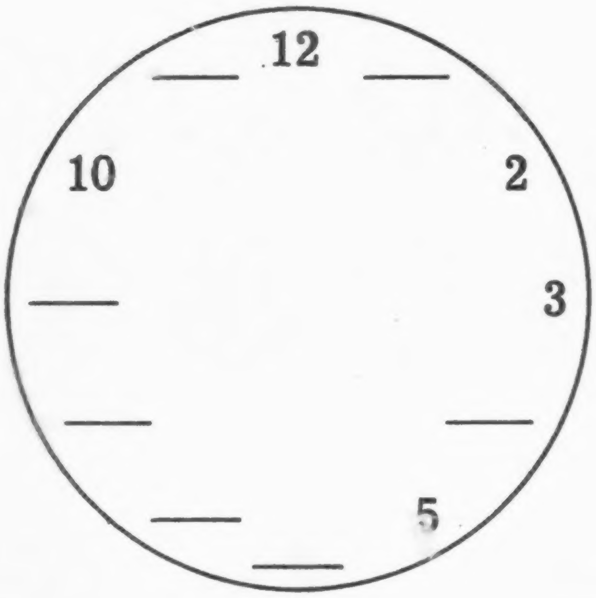
pi MATHEMATICS PLACEMENT TEST

Level B
Time (10)

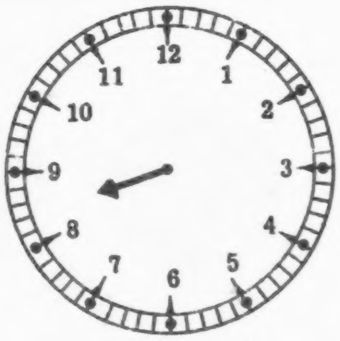
Name ______________________________ Date ____________________
Class ______________________________ Number __________________

TL. PTS.	
9	100%
NO. OF PTS.	%
8	89
7	78
6	67
5	56
4	44
3	33
2	22
1	11

Write the missing numbers on the clock face.



The little hand shows


12
1
2
3
4
5
6
7
8
9
10
11

after _____ o'clock and

before _____ o'clock

ipi **MATHEMATICS PLACEMENT TEST**

Level B
Systems of Measurement (11)

Name ______________________ **Date** ______________________
Class ______________________ **Number** ______________________

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Ring the answer.

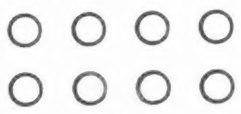
What is each part of a ruler called?

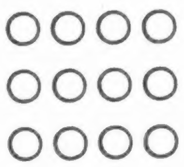
a foot an inch a yard

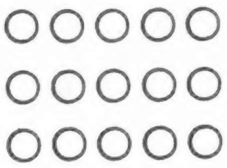
How many rulers put together make one yardstick?

two three four

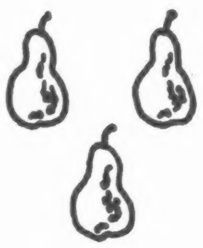
Ring one dozen.

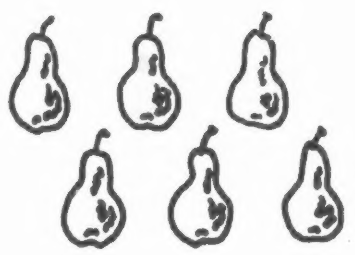


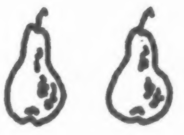




Ring one-half dozen.







What are the procedures followed in IPI Placement Testing?

In introducing a student into the Continuum, start with a Level of Placement tests that allows a student to begin on Units he can do, and permit him to move on to other Levels until he encounters a Unit he cannot do. Past experience with student performance on Placement Tests offers us the following general pattern for selecting the tests:

Grade	Use Level Placement Tests
1	B
2	B and C
3	B, C and D
4	C, D and E
5	D, E and F
6	D, E and F

For example, a third grade teacher selects Level C Placement Tests to start placement testing with the students in the class. The teacher helps individual students in reading directions and doing sample problems if they need help while taking the tests. Clerical aides correct the tests and fill out a Profile sheet for each student with the scores of Level C Placement Tests.

The following table represents Level C Placement Tests and summarizes the performance of one of the third graders on the test:

Units	Number of Skills in Units	Skills Tested	Scores*
C-Numeration	7	4,5,6,7	60%
C-Place Value	5	2,5	60%
C-Addition	5	3,4,5	80%
C-Subtraction	4	1,3	80%
C-Combination of Processes	6	4	20%
C-Fractions	4	3,4	25%
C-Money	4	1,2	100%
C-Time	2	5	50%
C-Systems of Measurement	3	2,3	60%
C-Geometry	2	1	100%

*Mastery Criterion: 80%

With these scores in hand, the teacher must make a number of decisions about this student: In which Units has he placed?; Does he need further testing?; If so, at the next higher or next lower level?

The following guidelines help to make these decisions.--------------->

Guidelines for Placing Students in IPI Mathematics:

1. 80% or above on any one unit indicates the student should be tested on the next higher level of that area.
   In our example, the student scored 80% or higher in C-Addition, C-Subtraction, C-Money and G-Geometry. This means he should be tested in these four areas on Level D (D-Add., D-Sub., D-M., D-Geom.) and so on through the levels until he scores under 80% in these Areas.

2. Areas appearing for the first time on a level being tested should also be included in placement testing.
   In our example, the student would be also tested in D-Mult. and D-Div., two Areas that start on Level D.

3. A score of 21% through 79% inclusive on any one unit indicates a student has been placed in the unit and is ready for pretesting in the unit. In our example, the student scored over 20% and under 80% in C-Numeration, C-Place Value, C-Fractions, C-Time and C-Systems of Measurement. His placement testing in these areas stops and he is placed in these units.

4. 20% or under on any one unit indicates that this student must be placed in a unit on a lower level. This means he should be tested on the next lower level of that Area until he scores over 20% and under 80%. At this point then, he is placed.
   In our example, the student scored 20% or below on C-Combination of processes. This means he should be tested in B-COP. However, since there is no such unit in the Continuum, the teacher places him in C-COP. Let us suppose he had tested below 20% in some other area that extends into lower levels, for instance, in C-Num. He then, would be placement tested in B-Num., the next lower level.

Some decisions are clear cut, particularly when the test scores on the Placement Tests fall well within the ranges indicated. It is the borderline cases of 80% and 20% that require the teacher to examine the test item(s) missed to decide if the student should be placed in the unit or given a different Level Placement Test.

As placement testing proceeds, the teacher selects only those Areas in additional Level Placement Tests needed to complete the student's placement. At this time, the teacher may decide to finish all the placement testing for the student and get a complete profile of his placement in the Continuum before proceeding to pretesting. This procedure of intensive placement testing is frequently discouraging and frustrating to the student. He wants to learn something. IPI teachers usually balance continued placement testing with starting a student on work in a unit in which he has already been placed. In this way, the student can start working on prescriptions while finishing his placement testing.

EXERCISES

The following Mathematics Placement Score Profile is one prepared for Joan Wiley, a first grader in Room 14. Her school happens to use Student Numbers. This student information is filled in one the Profile sheet by the aide.

Joan's teacher started administering Level B Placement Tests to the class on September 21 and the date is entered in the first box only in the column, Date of Test. The aide has corrected all the Tests and entered the scores and percentages for each student on a Profile sheet. Joan's Level B Placement Tests scores are also entered on her Profile sheet.

Examine the percentages on Joan's Profile sheet carefully. What decisions would you make concerning Joan? Use the page that accompanies the Profile sheet to record your decisions.

ipi MATHEMATICS — MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Wiley   STUDENT NUMBER ____________

SCHOOL STAMP ____________ GRADE 1   ROOM 14

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10							
		SCORE	9							
		%	90							
PLACE VALUE (02)		MAX. PTS.	5							
		SCORE	3							
		%	60							
ADDITION (03)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
SUBTRACTION (04)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13	▨	▨	▨	▨	▨		
		SCORE	8	▨	▨	▨	▨	▨		
		%	62	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
FRACTIONS (08)		MAX. PTS.	5							
		SCORE	3							
		%	60							
MONEY (09)		MAX. PTS.	5					▨	▨	
		SCORE	5					▨	▨	
		%	100					▨	▨	
TIME (10)		MAX. PTS.	9							
		SCORE	8							
		%	89							
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5						▨	
		SCORE	3						▨	
		%	60						▨	
GEOMETRY (12)		MAX. PTS.	5							
		SCORE	5							
		%	100							

On the Profile sheet the teacher fills in "B" in the column headed Placed at Level for those areas in which Joan has placed. The teacher also assigns Level C Placement Tests to Joan and directs her to do only C-Num., C-M., C-T., C-G., as well as C-COP which starts at Level C. These later tests are corrected by the aide, and the scores and percentages are recorded on the same Profile sheet. The sheet is returned to the teacher. This will look like Profile sheet #2. Notice that Joan has been placed in Level B for P.V., Frac., SOM and Add-Sub. Also, she has been placed in Level C for the separate Areas of Add. and Sub. based upon her performance in the combined Add-Sub. test. This is an exception to the placement guidelines that first and second grade teachers must remember: When a student places in Level B on the combined Add.-Sub. test, he is automatically placed in C-Add. and C-Sub. also. (Add. and Sub. as separate Areas start on Level C.)

Examine the percentages of the Level C Tests on Sheet #2. Indicate your decision in the column headed Placed at Level by inserting the letter of the Level at which Joan has placed. Compare this sheet with Profile Sheet #3 which follows Sheet #2.

USE YOUR 5 X 8 CARD TO UNCOVER THE ITEMS AND ANSWERS. FILL IN THE PERCENTAGES NEXT TO THE UNITS. INDICATE YOUR DECISION IN THE DECISION COLUMN BY FILLING IN: Placed, Test in next higher level, or Test in next lower level.

Unit	%	Decision
B-Num.		
B-P.V.		
B-Frac.		
B-Money		
B-Time		
B-SOM		
B-Geom.		
B-Add. & Sub.		

……

B-Num.	90	Test in next higher level.
B-P.V.	60	Placed
B-Frac.	60	Placed
B-Money	100	Test in next higher level.
B-Time	89	Test in next higher level.
B-SOM	60	Placed
B-Geom.	100	Test in next higher level.
B-Add. & Sub.	69	Placed

* * *

TURN TO NEXT PAGE FOR EXPLANATION OF B-PLACEMENT AND FURTHER PLACEMENT TESTING.

IPI MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Wiley STUDENT NUMBER ________ Sheet 2

SCHOOL STAMP ________ GRADE 1 ROOM 14

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	5						
		SCORE	9	0						
		%	90	0						
PLACE VALUE (02)		MAX. PTS.	5							B
		SCORE	3							
		%	60							
ADDITION (03)		MAX. PTS.								C
		SCORE								
		%								
SUBTRACTION (04)		MAX. PTS.								C
		SCORE								
		%								
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13							B
		SCORE	8							
		%	62							
MULTIPLICATION (05)		MAX. PTS.								
		SCORE								
		%								
DIVISION (06)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						
		SCORE		0						
		%		0						
FRACTIONS (08)		MAX. PTS.	5							B
		SCORE	3							
		%	60							
MONEY (09)		MAX. PTS.	5	5						
		SCORE	5	1						
		%	100	20						
TIME (10)		MAX. PTS.	9	3						
		SCORE	8	0						
		%	89	0						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5							B
		SCORE	3							
		%	60							
GEOMETRY (12)		MAX. PTS.	5	4						
		SCORE	5	3						
		%	100	75						

Profile Sheet #3 represents the original sheet with all the entries that have accumulated since the beginning of placement testing. Placement testing has placed Joan in all Areas except for Mult. and Div. She is automatically placed in D-Mult. and D-Div. These Areas start at Level D and Joan will go into them as she will go into the remaining Units in the order in which she encounters them in the sequence.

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Wiley
STUDENT NUMBER

Sheet 3

SCHOOL STAMP GRADE 1 ROOM 14

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	5						C
		SCORE	9	0						
		%	90	0						
PLACE VALUE (02)		MAX. PTS.	5							B
		SCORE	3							
		%	60							
ADDITION (03)		MAX. PTS.	▨							C
		SCORE	▨							
		%	▨							
SUBTRACTION (04)		MAX. PTS.	▨							C
		SCORE	▨							
		%	▨							
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13	▨	▨	▨	▨	▨		B
		SCORE	8	▨	▨	▨	▨	▨		
		%	62	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨							D
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨							D
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		C
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	5						B
		SCORE	▨	0						
		%	▨	0						
FRACTIONS (08)		MAX. PTS.	5							C
		SCORE	3							
		%	60							
MONEY (09)		MAX. PTS.	5	5				▨	▨	C
		SCORE	5	1				▨	▨	
		%	100	20				▨	▨	
TIME (10)		MAX. PTS.	9	3						B
		SCORE	8	0						
		%	89	0						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5						▨	C
		SCORE	3						▨	
		%	60						▨	
GEOMETRY (12)		MAX. PTS.	5	4						B
		SCORE	5	3						
		%	100	75						

Remember, placement testing is used to start a student in each Area of the Continuum. Once the student has been placed in each Area as Joan has been, Placement Tests are no longer needed for testing purposes. Occasionally, when a teacher has exceptional difficulty in diagnosing a pupil's persistent probelm in a particular unit, the teacher will reexamine the student's placement tests in that Area. This is done in order to determine if any of the lower levels are the source of weakness.

EXERCISE

What decisions would you make for the five students whose Placement Tests scores are recorded on the following Profile sheets?

Two reference charts: IPI Mathematics Continuum Placement Tests and Guidelines for Placing Students in Mathematics Continuum are included for your use.

Each set of sheets represents the same Profile sheet for each student at different stages in placement testing. Normally, test scores are added on to a single Profile sheet as the student continues his testing.

1. Review the charts.
2. Read the directions for completing this exercise. They follow the charts.
3. Refer to the charts to help you place the five students.

Level
Placement Tests

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒							☒
PLACE VALUE (02)	▨							☒
ADDITION (03)	▨	▨						☒
SUBTRACTION (04)	▨	▨						☒
ADDITION/ SUBTRACTION (34)	☒		▨	▨	▨	▨	▨	☒
MULTIPLICATION (05)	▨	▨	▨					☒
DIVISION (06)	▨	▨	▨					☒
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	☒
COMBINATION OF PROCESSES (07)	▨	▨						☒
FRACTIONS (08)	☒							☒
MONEY (09)	▨					☒	▨	▨
TIME (10)	▨							☒
SYSTEMS OF MEASUREMENT (11)	▨							▨
GEOMETRY (12)	▨							☒
SPECIAL TOPICS (13)	▨	▨	☒	☒	☒	☒	☒	☒

▨ = No existing units

☒ = No Placement Test for this unit

Reference Chart: IPI Mathematics Continuum Placement Tests

Reference chart: GUIDELINES FOR PLACING STUDENTS IN MATHEMATICS CONTINUUM

1. 80% or above on any one unit indicates that the student has mastery of the unit and should be tested on next higher level of that area. EXAMPLE: 80+% in D-Num. indicates that E-Num. Placement Test should be given.
   - (a) If the student scores 80+% on the next to highest level in any area, he is automatically placed in the highest level of the area. EXAMPLE: If 90% in E-Money (next to highest level in Money), then automatic placement in F-Money (highest level in Money).

2. 21% - 79% on any one unit indicates a student does not have mastery of the unit and should be placed in the unit. EXAMPLE: 63% in E-Add. indicates that the student should be placed in E-Add.

3. 0 - 20% on any one unit indicates that the student does not have the minimum skills needed to place in this unit, and he should be tested on the next lower level of that area. EXAMPLE: 16% in F-Frac. indicates that E-Frac. Placement Test should be given.
   - (a) If the student scores 80% or above in this next lower level of the area (indicating mastery of the level), return him to the original unit and place him in it. EXAMPLE: If 16% in F-Frac. and then 85% in E-Frac., place the student in F-Frac.
   - (b) If the student scores 21 - 79% in the next lower level of the area, place him in this unit. EXAMPLE: If 16% in F-Frac. and then 60% in E-Frac., place the student in E-Frac.
   - (c) If the student scores 0 - 20% in the next lower level of the area, continue taking him back into lower levels of the area until he can be placed (21 - 79%). If there are no lower levels for the area, place him on the lowest level in the area.

EXAMPLE: If 10% on F-Mult. and then 0% on E-Mult., automatically place the student in D-Mult. which is lowest level in Mult.

4. When a student continues placement testing on any level, he must take the tests in the assigned areas as well as in the areas that start on that level.
EXAMPLE: A student is assigned to take additional tests on Level C in Num., Place Value, Frac. He must take the C-Combination of Processes test also, since it starts on Level C.
A student is assigned to take additional tests in Level D. He must also take D-Mult. and D-Div. which start on Level D.

5. There are times when a student does not encounter an area in his placement testing. This occurs when the area starts at a level higher than the level of the Placement Tests taken. In this case, place the student automatically on the starting level of the area.
EXAMPLE: A student has taken B and C Placement Tests and is placed in all areas except Mult. and Div.-Mult. and Div. start on Level D. The student is automatically placed in D-Mult. and D-Div.

6. Level B-Add.-Sub. is a special case.
A student takes B-Add.-Sub. test as part of B Placement Tests:
   (a) Any student scoring 0 - 20% in B-Add.-Sub. is placed in A-Add., B-Add.-Sub., C-Add., and C-Sub. These three levels are entered simultaneously on the Profile sheet.
   (b) Any student scoring 21 - 79% in B-Add.-Sub. is placed in B-Add.-Sub., C-Add. and C-Sub. These three levels are entered simultaneously on the Profile sheet.
   (c) Any student scoring 80+% in B-Add.-Sub. indicates mastery of the unit. Do not make any entry on the Profile sheet. He is tested then in C-Add. and C-Sub., and from this point on the usual placement guidelines are followed.

OR

A student takes B-Add.-Sub. test when he has scored 0 - 20% on either C-Add. or C-Sub. This is a case of a student being moved back for additional testing.

(a) Any student scoring 0 - 20%. (See (a) above.)

(b) Any student scoring 21 - 79%. (See (b) above.)

(c) Any student scoring 80+% in B-Add.-Sub. is automatically placed in C-Add. and C-Sub. This is a case of returning a student to the original unit and placing him in it. EXAMPLE: If 85% in B-Add.-Sub., place in C-Add. and C-Sub.

Directions

1. Examine the percentages on Sheet #1. Using the placement guidelines, decide whether or not the student is placed or if he needs additional testing.

2. If the student is placed in an Area, indicate this by filling in the Level at which he places under Placed at Level.
   If the student needs further testing, do not fill in anything.

3. Turn to Sheet #2 and compare your placements with those on the sheet.
   Also, examine the percentages entered for the additional testing the student has taken.

4. If the student can be placed in the additional Areas now, fill in the Level at which he places under Placed at Level.
   If the student still needs additional testing in the remaining areas, do not fill in anything.

5. Turn to Sheet #3. Compare your placements with the sheet.
   Examine the percentages entered for the continued testing.
   Continue this process until the student is placed in each Area, either through testing or automatic assignment to a Level.

6. Refer to the Continuum charts and Placement Tests as needed.

7. Read the summary of each student's placement. This follows each set and will give you a total picture of how the student is placed.

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME John Rocco STUDENT NUMBER

Sheet 1

SCHOOL STAMP GRADE 2 ROOM 6

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10							
		SCORE	10							
		%	100							
PLACE VALUE (02)		MAX. PTS.	5							
		SCORE	4							
		%	80							
ADDITION (03)		MAX. PTS.								
		SCORE								
		%								
SUBTRACTION (04)		MAX. PTS.								
		SCORE								
		%								
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13							
		SCORE	11							
		%	83							
MULTIPLICATION (05)		MAX. PTS.								
		SCORE								
		%								
DIVISION (06)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.								
		SCORE								
		%								
FRACTIONS (08)		MAX. PTS.	5							
		SCORE	2							
		%	40							
MONEY (09)		MAX. PTS.	5							
		SCORE	2							
		%	40							
TIME (10)		MAX. PTS.	9							
		SCORE	7							
		%	78							
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5							
		SCORE	4							
		%	80							
GEOMETRY (12)		MAX. PTS.	5							
		SCORE	4							
		%	80							

IPI MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME John Rocco

STUDENT NUMBER

Sheet 2

SCHOOL STAMP

GRADE 2

ROOM 6

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	5						
		SCORE	10	2						
		%	100	40						
PLACE VALUE (02)		MAX. PTS.	5	5						
		SCORE	4	1						
		%	80	20						
ADDITION (03)		MAX. PTS.		10						
		SCORE		7						
		%		70						
SUBTRACTION (04)		MAX. PTS.		10						
		SCORE		8						
		%		80						
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13	When a student places out of						do not enter level
		SCORE	11	combined unit of Add/Sub he is						
		%	83	placement tested in C-Add + C-Sub.						
MULTIPLICATION (05)		MAX. PTS.								
		SCORE								
		%								
DIVISION (06)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
MONEY (09)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
TIME (10)		MAX. PTS.	9							B
		SCORE	7							
		%	78							
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5	5						
		SCORE	4	3						
		%	80	60						
GEOMETRY (12)		MAX. PTS.	5	5						
		SCORE	4	1						
		%	80	20						

IPI MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME John Rocco
STUDENT NUMBER

Sheet 3

SCHOOL STAMP
GRADE 2
ROOM 6

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	5						C
		SCORE	10	2						
		%	100	40						
PLACE VALUE (02)		MAX. PTS.	5	5						C
		SCORE	4	1						
		%	80	20						
ADDITION (03)		MAX. PTS.		10						C
		SCORE		7						
		%		70						
SUBTRACTION (04)		MAX. PTS.		10	5					
		SCORE		8	0					
		%		80	0					
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13							
		SCORE	11							
		%	83							
MULTIPLICATION (05)		MAX. PTS.			10					
		SCORE			0					
		%			0					
DIVISION (06)		MAX. PTS.			10					
		SCORE			1					
		%			10					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
MONEY (09)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
TIME (10)		MAX. PTS.	9							B
		SCORE	7							
		%	78							
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5	5						C
		SCORE	4	3						
		%	80	60						
GEOMETRY (12)		MAX. PTS.	5	5						C
		SCORE	4	1						
		%	80	20						

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MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME John Rocco

STUDENT NUMBER

Sheet 4

SCHOOL STAMP

GRADE 2

ROOM 6

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	5						C
		SCORE	10	2						
		%	100	40						
PLACE VALUE (02)		MAX. PTS.	5	5						C
		SCORE	4	1						
		%	80	20						
ADDITION (03)		MAX. PTS.		10						C
		SCORE		7						
		%		70						
SUBTRACTION (04)		MAX. PTS.		10	5					D
		SCORE		8	0					
		%		80	0					
ADDITION/ SUBTRACTION (34)		MAX. PTS.	13							X
		SCORE	11							
		%	83							
MULTIPLICATION (05)		MAX. PTS.			10					D
		SCORE			0					
		%			0					
DIVISION (06)		MAX. PTS.			10					D
		SCORE			1					
		%			10					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								X
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
MONEY (09)		MAX. PTS.	5							B
		SCORE	2							
		%	40							
TIME (10)		MAX. PTS.	9							B
		SCORE	7							
		%	78							
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.	5	5						C
		SCORE	4	3						
		%	80	60						
GEOMETRY (12)		MAX. PTS.	5	5						C
		SCORE	4	1						
		%	80	20						

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Summary of Placement Testing for John Rocco

1. Teacher selects B-Placement Tests for this second grader.

2. The teacher administers B-Placement Tests.

   The aide scores the Tests and enters the Level B test scores on John's Profile sheet.

3. The teacher examines the Profile sheet and places John in Level B in Frac., Money, Time (scores between 21 - 79%). Assigns C-Placement Tests in Num., Place Value, Add., Sub., Combination of Processes, Systems of Measurement, Geom. (scores 80% or over).
   These are all Areas in which he is not yet placed.

4. Teacher administers Tests. Aide scores Tests and adds scores to Profile sheet.

5. The teacher examines the Profile sheet and is able to place John in Level C in Num., P.V., Add., COP, SOM, Geom. (21 - 79%). Assigns D-Placement Tests in Sub., Mult., Div., (80% or over).

6. Teacher administers tests. Aide scores tests and adds test scores to Profile sheet.

7. Teacher examines the Profile sheet and is able to place John in Level D in Sub., Mult., Div. John has been placed in each Area. Placement testing for John is completed.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Philip Johnson

STUDENT NUMBER

Sheet 1

SCHOOL STAMP

GRADE 3

ROOM 9

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5						
		SCORE		5						
		%		100						
PLACE VALUE (02)		MAX. PTS.		5						
		SCORE		5						
		%		100						
ADDITION (03)		MAX. PTS.	▨	10						
		SCORE	▨	10						
		%	▨	100						
SUBTRACTION (04)		MAX. PTS.	▨	10						
		SCORE	▨	9						
		%	▨	90						
ADDITION/ SUBTRACTION (34)		MAX. PTS.		▨	▨	▨	▨	▨		
		SCORE		▨	▨	▨	▨	▨		
		%		▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	5						
		SCORE	▨	2						
		%	▨	40						
FRACTIONS (08)		MAX. PTS.		4						
		SCORE		0						
		%		0						
MONEY (09)		MAX. PTS.		5				▨	▨	
		SCORE		5				▨	▨	
		%		100				▨	▨	
TIME (10)		MAX. PTS.		3						
		SCORE		1						
		%		33						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5					▨	
		SCORE		3					▨	
		%		60					▨	
GEOMETRY (12)		MAX. PTS.		4						
		SCORE		4						
		%		100						

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Philip Johnson

STUDENT NUMBER

Sheet 2

SCHOOL STAMP

GRADE 3

ROOM 9

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5	5					
		SCORE		5	2					
		%		100	40					
PLACE VALUE (02)		MAX. PTS.		5	5					
		SCORE		5	2					
		%		100	40					
ADDITION (03)		MAX. PTS.		10	5					
		SCORE		10	2					
		%		100	40					
SUBTRACTION (04)		MAX. PTS.		10	5					
		SCORE		9	0					
		%		90	0					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10					
		SCORE			2					
		%			20					
DIVISION (06)		MAX. PTS.			10					
		SCORE			4					
		%			40					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		2						
		%		40						
FRACTIONS (08)		MAX. PTS.	5	4						
		SCORE	2	0						
		%	40	0						
MONEY (09)		MAX. PTS.		5	5					
		SCORE		5	1					
		%		100	20					
TIME (10)		MAX. PTS.		13						C
		SCORE		1						
		%		33						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
GEOMETRY (12)		MAX. PTS.		4	4					
		SCORE		4	1					
		%		100	25					

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Philip Johnson
STUDENT NUMBER
Sheet 3
SCHOOL STAMP
GRADE 3
ROOM 9

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5	5					D
		SCORE		5	2					
		%		100	40					
PLACE VALUE (02)		MAX. PTS.		5	5					D
		SCORE		5	2					
		%		100	40					
ADDITION (03)		MAX. PTS.		10	5					D
		SCORE		10	2					
		%		100	40					
SUBTRACTION (04)		MAX. PTS.		10	5					D
		SCORE		9	0					
		%		90	0					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								X
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10					D
		SCORE			2					
		%			20					
DIVISION (06)		MAX. PTS.			10					D
		SCORE			4					
		%			40					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								X
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		2						
		%		40						
FRACTIONS (08)		MAX. PTS.	5	4						B
		SCORE	2	0						
		%	40	0						
MONEY (09)		MAX. PTS.		5	5					D
		SCORE		5	1					
		%		100	20					
TIME (10)		MAX. PTS.		3						C
		SCORE		1						
		%		33						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
GEOMETRY (12)		MAX. PTS.		4	4					D
		SCORE		4	1					
		%		100	25					

Summary of Placement Testing for Philip Johnson

1. Teacher selects and administers Level C-Placement Tests to this third grader.
   The aide scores the tests and enters Level C test scores on Philip's Profile sheet.

2. The teacher examines the Profile sheet and places Philip on Level C in COP, T, SOM (21 - 79%). Assigns Level B Placement Test in Frac. (0 - 20%); Level D Placement Tests in Num., P.V., Add., Sub., Mult., Div., M., Geom. (80% or over), or Area starts on that Level.

3. Teacher administers tests. Aide scores tests and adds test scores to Profile sheet.

4. The teacher examines the Profile sheet and is able to place Philip on Level B in Frac. and in Level D all the remaining Areas (21 - 79%) Philip has been placed in each Area. Placement Testing for Philip is completed.

ipi MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Morgan

STUDENT NUMBER

Sheet 1

SCHOOL STAMP

GRADE 4

ROOM 11

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H	B	C	D	E	F	G	H	PLACED AT LEVEL
NUMERATION (01)		MAX. PTS.		5						
		SCORE		5						
		%		100						
PLACE VALUE (02)		MAX. PTS.		5						
		SCORE		5						
		%		100						
ADDITION (03)		MAX. PTS.		10						
		SCORE		10						
		%		100						
SUBTRACTION (04)		MAX. PTS.		10						
		SCORE		9						
		%		90						
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.								
		SCORE								
		%								
DIVISION (06)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.		4						
		SCORE		2						
		%		50						
MONEY (09)		MAX. PTS.		5						
		SCORE		5						
		%		100						
TIME (10)		MAX. PTS.		3						
		SCORE		2						
		%		67						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5						
		SCORE		4						
		%		80						
GEOMETRY (12)		MAX. PTS.		5						
		SCORE		5						
		%		100						

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MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Morgan STUDENT NUMBER

Sheet 2

SCHOOL STAMP GRADE 4 ROOM 11

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5	5					
		SCORE		5	4					
		%		100	80					
PLACE VALUE (02)		MAX. PTS.		5	5					
		SCORE		5	2					
		%		100	40					
ADDITION (03)		MAX. PTS.	▨	10	5					
		SCORE	▨	10	3					
		%	▨	100	60					
SUBTRACTION (04)		MAX. PTS.	▨	10	5					
		SCORE	▨	9	3					
		%	▨	90	60					
ADDITION/ SUBTRACTION (34)		MAX. PTS.		▨	▨	▨	▨	▨		
		SCORE		▨	▨	▨	▨	▨		
		%		▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨		10					
		SCORE	▨		10					
		%	▨		100					
DIVISION (06)		MAX. PTS.	▨		10					
		SCORE	▨		10					
		%	▨		100					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	5						C
		SCORE	▨	3						
		%	▨	60						
FRACTIONS (08)		MAX. PTS.		4						C
		SCORE		2						
		%		50						
MONEY (09)		MAX. PTS.		5	5			▨	▨	
		SCORE		5	5			▨	▨	
		%		100	100			▨	▨	
TIME (10)		MAX. PTS.		3						C
		SCORE		2						
		%		67						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5				▨	
		SCORE		4	1				▨	
		%		80	20				▨	
GEOMETRY (12)		MAX. PTS.		5	4					
		SCORE		5	2					
		%		100	50					

ipi
MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

UDENT NAME Joan Morgan
STUDENT NUMBER

Sheet 3

HOOL STAMP
GRADE 4
ROOM 11

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5	5	5				
		SCORE		5	4	0				
		%		100	80	0				
PLACE VALUE (02)		MAX. PTS.		5	5					D
		SCORE		5	2					
		%		100	40					
ADDITION (03)		MAX. PTS.		10	5					D
		SCORE		10	3					
		%		100	60					
SUBTRACTION (04)		MAX. PTS.		10	5					D
		SCORE		9	3					
		%		90	60					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				
		SCORE			10	1				
		%			100	20				
DIVISION (06)		MAX. PTS.			10	5				
		SCORE			10	1				
		%			100	20				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.		4						C
		SCORE		2						
		%		50						
MONEY (09)		MAX. PTS.		5	5	5				
		SCORE		5	5	4				
		%		100	100	60				
TIME (10)		MAX. PTS.		3						C
		SCORE		2						
		%		67						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5					D
		SCORE		4	1					
		%		80	20					
GEOMETRY (12)		MAX. PTS.		5	4					D
		SCORE		5	2					
		%		100	50					

ipi MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joan Morgan

STUDENT NUMBER

Sheet 4

SCHOOL STAMP

GRADE 4

ROOM 11

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		5	5	5				E
		SCORE		5	4	0				
		%		100	80	0				
PLACE VALUE (02)		MAX. PTS.		5	5					D
		SCORE		5	2					
		%		100	40					
ADDITION (03)		MAX. PTS.		10	5					D
		SCORE		10	3					
		%		100	60					
SUBTRACTION (04)		MAX. PTS.		10	5					D
		SCORE		9	3					
		%		90	60					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								X
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				E
		SCORE			10	1				
		%			100	20				
DIVISION (06)		MAX. PTS.			10	5				E
		SCORE			10	1				
		%			100	20				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								X
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		5						C
		SCORE		3						
		%		60						
FRACTIONS (08)		MAX. PTS.		4						C
		SCORE		2						
		%		50						
MONEY (09)		MAX. PTS.		5	5	5				E
		SCORE		5	5	4				
		%		100	100	60				
TIME (10)		MAX. PTS.		3						C
		SCORE		2						
		%		67						
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5					D
		SCORE		4	1					
		%		80	20					
GEOMETRY (12)		MAX. PTS.		5	4					D
		SCORE		5	2					
		%		100	50					

Summary of Placement Testing for Joan Morgan

1. The teacher selects and administers C-Placement Tests to this fourth grader.
   The aide scores the tests and enters Level C test scores on Joan's Profile sheets.

2. The teacher examines the Profile sheet and places Joan on Level C in COP, Frac., Time (21 - 79%). Assigns Level D Placement Tests in Num., P.V., Add., Sub., Mult., Div., Money, SOM, Geom. (80% or over, or Area starts on that Level).

3. The teacher administers the tests. Aide scores the tests and adds the test scores to Profile sheet.

4. The teacher examines the Profile sheet and is able to place Joan on Level D in P.V., Add., Sub., SOM, Geom. (21 - 79%). Assigns Level E Placement Tests in Num., Mult., Div., Money (80% or over).

5. The teacher administers the tests. Aide scores the tests and adds the test scores to the Profile sheet.

6. The teacher examines the Profile sheet and is able to place Joan in Level E in the remaining Areas (21 - 79%). Joan has been placed in each Area. Placement Testing for Joan is completed.

You may skip the rest of this exercise, if you have placed the 3 preceding students accurately.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joseph Howard STUDENT NUMBER

Sheet 1

SCHOOL STAMP GRADE 5 ROOM 7

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5					
		SCORE			4					
		%			80					
PLACE VALUE (02)		MAX. PTS.			5					
		SCORE			2					
		%			40					
ADDITION (03)		MAX. PTS.			5					
		SCORE			4					
		%			80					
SUBTRACTION (04)		MAX. PTS.			5					
		SCORE			5					
		%			100					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10					
		SCORE			10					
		%			100					
DIVISION (06)		MAX. PTS.			10					
		SCORE			8					
		%			80					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5					
		SCORE			2					
		%			40					
FRACTIONS (08)		MAX. PTS.			5					
		SCORE			3					
		%			60					
MONEY (09)		MAX. PTS.			5					
		SCORE			4					
		%			80					
TIME (10)		MAX. PTS.			6					
		SCORE			6					
		%			100					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5					
		SCORE			1					
		%			20					
GEOMETRY (12)		MAX. PTS.			4					
		SCORE			0					
		%			0					

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joseph Howard

STUDENT NUMBER

Sheet 2

SCHOOL STAMP

GRADE 5

ROOM 7

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				
		SCORE			4	2				
		%			80	40				
PLACE VALUE (02)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
ADDITION (03)		MAX. PTS.			5	5				
		SCORE			4	5				
		%			80	100				
SUBTRACTION (04)		MAX. PTS.			5	5				
		SCORE			5	4				
		%			100	80				
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				
		SCORE			10	3				
		%			100	60				
DIVISION (06)		MAX. PTS.			10	5				
		SCORE			8	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
FRACTIONS (08)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
MONEY (09)		MAX. PTS.			5	5				
		SCORE			4	4				
		%			80	80				
TIME (10)		MAX. PTS.			6	5				
		SCORE			6	4				
		%			100	80				
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5					
		SCORE		4	1					
		%		80	20					
GEOMETRY (12)		MAX. PTS.		4	4					
		SCORE		3	0					
		%		75	0					

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joseph Howard
STUDENT NUMBER

Sheet 3

SCHOOL STAMP GRADE 5 ROOM 7

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				E
		SCORE			4	2				
		%			80	40				
PLACE VALUE (02)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
ADDITION (03)		MAX. PTS.			5	5	5			
		SCORE			4	5	3			
		%			80	100	60			
SUBTRACTION (04)		MAX. PTS.			5	5	5			
		SCORE			5	4	3			
		%			100	80	60			
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				E
		SCORE			10	3				
		%			100	60				
DIVISION (06)		MAX. PTS.			10	5				E
		SCORE			8	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
FRACTIONS (08)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
MONEY (09)		MAX. PTS.			5	5				F
		SCORE			4	4				
		%			80	80				
TIME (10)		MAX. PTS.			6	5	5			
		SCORE			6	4	1			
		%			100	80	20			
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5					D
		SCORE		4	1					
		%		80	20					
GEOMETRY (12)		MAX. PTS.		4	4					C
		SCORE		3	0					
		%		75	0					

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ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joseph Howard
STUDENT NUMBER
Sheet 4

SCHOOL STAMP GRADE 5 ROOM 7

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H	B	C	D	E	F	G	H	PLACED AT LEVEL
NUMERATION (01)		MAX. PTS.			5	5				E
		SCORE			4	2				
		%			80	40				
PLACE VALUE (02)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
ADDITION (03)		MAX. PTS.			5	5	5			F
		SCORE			4	5	3			
		%			80	100	60			
SUBTRACTION (04)		MAX. PTS.			5	5	5			F
		SCORE			5	4	3			
		%			100	80	60			
ADDITION/ SUBTRACTION (34)		MAX. PTS.								X
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				E
		SCORE			10	3				
		%			100	60				
DIVISION (06)		MAX. PTS.			10	5				E
		SCORE			8	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								X
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5					D
		SCORE			2					
		%			40					
FRACTIONS (08)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
MONEY (09)		MAX. PTS.			5	5				F
		SCORE			4	4				
		%			80	80				
TIME (10)		MAX. PTS.			6	5	5			F
		SCORE			6	4	1			
		%			100	80	20			
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		5	5					D
		SCORE		4	1					
		%		80	20					
GEOMETRY (12)		MAX. PTS.		4	4					C
		SCORE		3	0					
		%		75	0					

Summary of Placement Testing for Joseph Howard

This summary will consist of a set of statements about Joseph's placement testing. It will be understood that the teacher makes all the professional decisions and that the aide performs all the clerical duties.

1. Level D Placement Tests are taken by Joseph.

2. Student is placed on Level D in P.V., COP, Frac. Assigned to take Level E tests in Num., Add., Sub., Mult., Div., Money, Time (80% or over); also assigned to take Level C tests in SOM (borderline 20%) and Geom. (0 - 20%).

3. Student is placed on Level E in Num., Mult., Div. (21 - 79%); on Level D in SOM since Joseph has passed Level C; on Level C in Geom. (21 - 79%). Assigned to Level F tests in Add., Sub., Time (Automatic placement in Level F-Money which is highest unit.)

4. Student is placed on Level F in the remaining Areas (21 - 79%).

5. Placement testing is completed.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Kate Brown
STUDENT NUMBER
Sheet 1

SCHOOL STAMP
GRADE 6
ROOM 10

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5					
		SCORE			5					
		%			100					
PLACE VALUE (02)		MAX. PTS.			5					
		SCORE			5					
		%			100					
ADDITION (03)		MAX. PTS.			5					
		SCORE			5					
		%			100					
SUBTRACTION (04)		MAX. PTS.			5					
		SCORE			5					
		%			100					
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10					
		SCORE			10					
		%			100					
DIVISION (06)		MAX. PTS.			5					
		SCORE			4					
		%			80					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5					
		SCORE			4					
		%			80					
FRACTIONS (08)		MAX. PTS.			5					
		SCORE			4					
		%			80					
MONEY (09)		MAX. PTS.			5					
		SCORE			3					
		%			60					
TIME (10)		MAX. PTS.			6					
		SCORE			5					
		%			83					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5					
		SCORE			5					
		%			100					
GEOMETRY (12)		MAX. PTS.			4					
		SCORE			3					
		%			75					

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MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Kate Brown STUDENT NUMBER

Sheet 2

SCHOOL STAMP GRADE 6 ROOM 10

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				
		SCORE			5	3				
		%			100	60				
PLACE VALUE (02)		MAX. PTS.			5	7				
		SCORE			5	7				
		%			100	100				
ADDITION (03)		MAX. PTS.			5	5				
		SCORE			5	4				
		%			100	80				
SUBTRACTION (04)		MAX. PTS.			5	5				
		SCORE			5	3				
		%			100	60				
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5				
		SCORE			10	4				
		%			100	80				
DIVISION (06)		MAX. PTS.			5	5				
		SCORE			4	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5	5				
		SCORE			4	5				
		%			80	100				
FRACTIONS (08)		MAX. PTS.			5	10				
		SCORE			4	1				
		%			80	10				
MONEY (09)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
TIME (10)		MAX. PTS.			6	9				
		SCORE			5	7				
		%			83	78				
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5	5				
		SCORE			5	4				
		%			100	80				
GEOMETRY (12)		MAX. PTS.			4					D
		SCORE			3					
		%			75					

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Kate Brown
STUDENT NUMBER

Sheet 3

SCHOOL STAMP
GRADE 6
ROOM 10

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
PLACE VALUE (02)		MAX. PTS.			5	7	5			
		SCORE			5	7	5			
		%			100	100	100			
ADDITION (03)		MAX. PTS.			5	5	5			
		SCORE			5	4	2			
		%			100	80	40			
SUBTRACTION (04)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5	5			
		SCORE			10	4	2			
		%			100	80	40			
DIVISION (06)		MAX. PTS.			5	5				E
		SCORE			4	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5	5	5			
		SCORE			4	5	5			
		%			80	10	100			
FRACTIONS (08)		MAX. PTS.			5	10				E
		SCORE			4	1				
		%			80	10				
MONEY (09)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
TIME (10)		MAX. PTS.			6	9				E
		SCORE			5	7				
		%			83	78				
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5	5	5			
		SCORE			5	4	2			
		%			100	80	40			
GEOMETRY (12)		MAX. PTS.			4					D
		SCORE			3					
		%			75					

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Kate Brown

STUDENT NUMBER

Sheet 4

SCHOOL STAMP

GRADE 6

ROOM 10

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
PLACE VALUE (02)		MAX. PTS.			5	7	5	6		
		SCORE			5	7	5	3		
		%			100	100	100	50		
ADDITION (03)		MAX. PTS.			5	5	5			F
		SCORE			5	4	2			
		%			100	80	40			
SUBTRACTION (04)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
ADDITION/ SUBTRACTION (34)		MAX. PTS.								
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5	5			F
		SCORE			10	4	2			
		%			100	80	40			
DIVISION (06)		MAX. PTS.			5	5				E
		SCORE			4	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5	5	5	5		
		SCORE			4	5	5	4		
		%			80	100	100	80		
FRACTIONS (08)		MAX. PTS.			5	10				E
		SCORE			4	1				
		%			80	10				
MONEY (09)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
TIME (10)		MAX. PTS.			6	9				E
		SCORE			5	7				
		%			83	78				
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5	5	5			F
		SCORE			5	4	2			
		%			100	80	40			
GEOMETRY (12)		MAX. PTS.			4					D
		SCORE			3					
		%			75					

ipi MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Kate Brown

STUDENT NUMBER

Sheet 5

SCHOOL STAMP

GRADE 6

ROOM 10

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
PLACE VALUE (02)		MAX. PTS.			5	7	5	6		G
		SCORE			5	7	5	3		
		%			100	100	100	50		
ADDITION (03)		MAX. PTS.			5	5	5			F
		SCORE			5	4	2			
		%			100	80	40			
SUBTRACTION (04)		MAX. PTS.			5	5				E
		SCORE			5	3				
		%			100	60				
ADDITION/ SUBTRACTION (34)		MAX. PTS.								X
		SCORE								
		%								
MULTIPLICATION (05)		MAX. PTS.			10	5	5			F
		SCORE			10	4	2			
		%			100	80	40			
DIVISION (06)		MAX. PTS.			5	5				E
		SCORE			4	3				
		%			80	60				
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								X
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.			5	5	5	5		H
		SCORE			4	5	5	4		
		%			80	100	100	80		
FRACTIONS (08)		MAX. PTS.			5	10				E
		SCORE			4	1				
		%			80	10				
MONEY (09)		MAX. PTS.			5					D
		SCORE			3					
		%			60					
TIME (10)		MAX. PTS.			6	9				E
		SCORE			5	7				
		%			83	78				
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.			5	5	5			F
		SCORE			5	4	2			
		%			100	80	40			
GEOMETRY (12)		MAX. PTS.			4					D
		SCORE			3					
		%			75					

Summary of Placement Testing for Kate Brown

1. Level D Placement Tests are taken by Kate.

2. Student is placed on Level D in Money, and Geom. Assigned Level E Placement Tests in Num., P.V., Add., Sub., Mult., Div., COP, Frac., Time and SOM.

3. Student is placed on Level E in Num., Sub., Div., Frac., Time (21 - 79%). Assigned Level F Placement Tests in P.V., Add., Mult., COP, SOM (80% or over).

4. Student is placed in Level F in Add., Mult., Som. (21 - 79%).

5. Student is placed in Level G in P.V. (21 - 79%) and automatically placed in Level H in COP (highest Level in that Area).

6. Placement testing is completed.

TEACHING IN IPI

PROCEDURES FOR PLACEMENT TESTING

Teacher	Student	Aide
1. Selects a starting level for placement testing.		
2. Administers placement tests:	Takes assigned Placement Tests:	Scores tests.
a. Reads directions as needed	a. Gives completed tests to aide.	Enters scores and % on student's Profile sheet.
3. Examines the scores and % on the Profile sheet:	Takes assigned Placement Tests:	Scores tests.
a. Places students according to Placement Guidelines.	a. Gives completed tests to aide.	Adds scores and % to student's Profile sheet
b. Assigns and administers additional testing according to Placement Guidelines.		
4. Continues placement testing until student has been placed in each area of the Continuum:	Takes assigned Placement Tests:	Scores tests. Adds scores and % to student's Profile sheet.
a. Repeats step 3.	a. Gives completed test to aide.	
b. Starts student working in first unit in which he has placed by pretesting him.	Starts working in Continuum by taking pretest in assigned unit.	

EXERCISE

START WORKING IN THE CONTINUUM

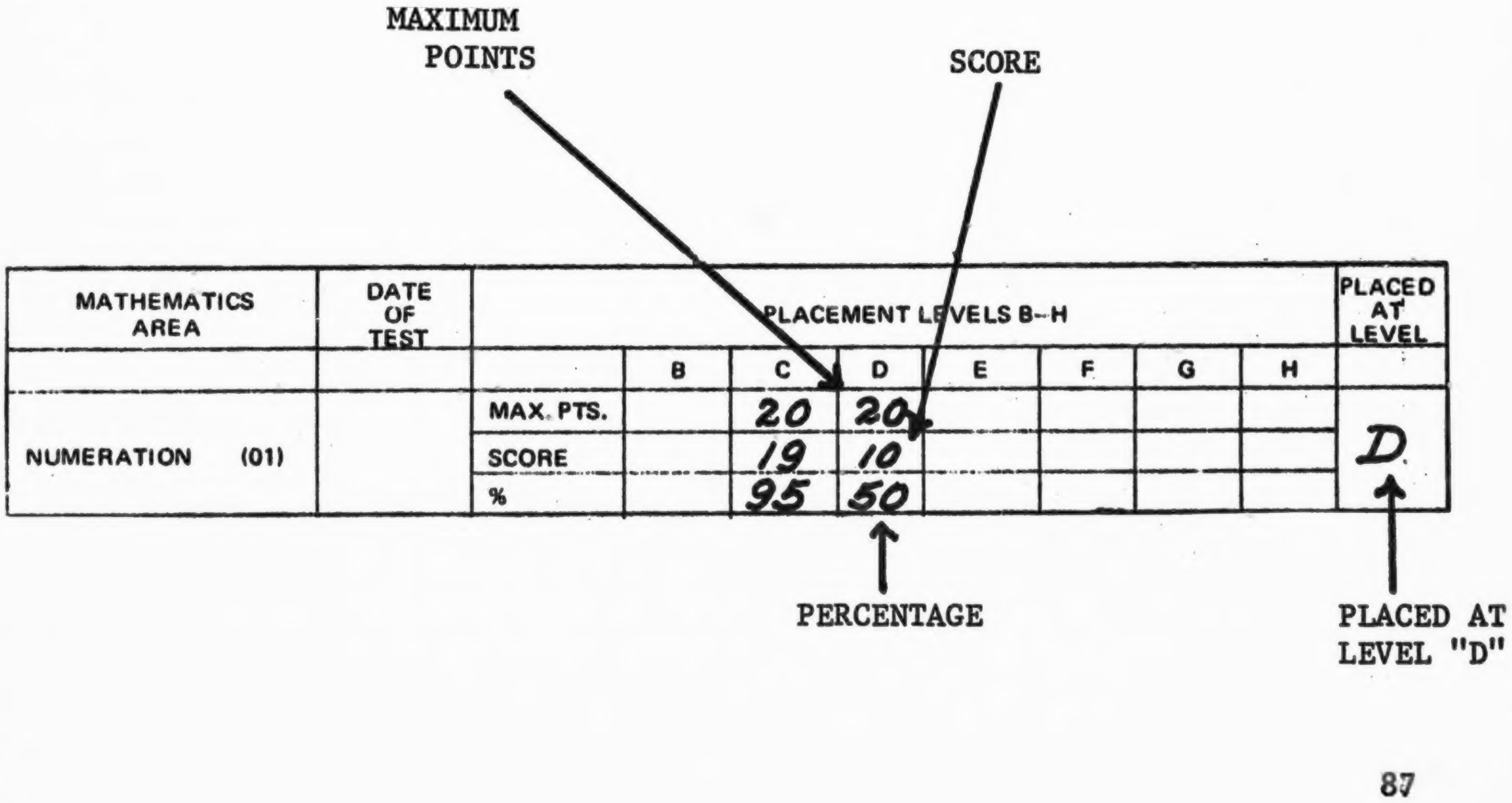
You are ready to begin working in IPI Mathematics by taking Placement Tests. You will act as the teacher, student and aide for the purpose of familiarizing yourself with these three IPI roles. In an actual IPI classroom, these roles are performed by separate persons.

1. Start placement testing on Level B.
2. Use the Level B Placement Tests booklet you reviewed earlier and do the test items as directed.
3. Score the tests.
4. Fill out a Mathematics Placement Score Profile that follows and enter the scores and percentages for Level B Placement Tests.
5. Use the percentages to place yourself in the units or to assign additional testing.
6. Enter placement levels for areas in which you have placed.
7. Use the other Placement Tests booklets that contain the additional tests assigned to you and do only those tests as directed.
8. Score the tests by using a scoring key.
9. Add the scores and percentages to your Profile sheet.
10. Repeat the directions given in #5-9 to complete placement in the Mathematics Continuum.

Combine working through the IPI Continuum with completing Teaching in IPI

MATHEMATICS PLACEMENT SCORE PROFILE: INSTRUCTIONS

1. Look at the top of the form. The aide:
   a. Fills in student name only.
2. Look at the rest of the form. The aide:
   a. Fills in date of test. This is the date all placement testing began and needs to be filled in only once.
   b. Fills in maximum points in the appropriate box for each mathematics unit tested.
   c. Fills in score beneath the maximum points for each unit. It is the number of points that the student achieved.
   d. Fills in the percentage beneath the score for each unit. Percentage is obtained by dividing the score by the maximum points. For example: John Jones in C-Numeration scored 19 out of 20 maximum achievable points. The correct percentage is 19/20=95%.
3. The teacher fills in placed at level for each mathematics area. This entry is the level which the student has not successfully passed. For example, John Jones was successful in C-Numeration. His teacher then assigned him placement test materials in D-Numeration. In this unit he achieved a score of 10 out of 20 maximum achievable points, giving a percentage of 50. Since he was not successful in D-Numeration, his teacher placed him at level D on the Mathematics Placement Score Profile Forms, as shown in the diagram below.



MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.		20	20					D
		SCORE		19	10					
		%		95	50					

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME ____________________ STUDENT NUMBER ____________________

SCHOOL STAMP__________ GRADE __________ ROOM __________

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B-H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.								
		SCORE								
		%								
PLACE VALUE (02)		MAX. PTS.								
		SCORE								
		%								
ADDITION (03)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
SUBTRACTION (04)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
ADDITION/ SUBTRACTION (34)		MAX. PTS.		▨	▨	▨	▨	▨		
		SCORE		▨	▨	▨	▨	▨		
		%		▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨							
		SCORE	▨							
		%	▨							
FRACTIONS (08)		MAX. PTS.								
		SCORE								
		%								
MONEY (09)		MAX. PTS.						▨	▨	
		SCORE						▨	▨	
		%						▨	▨	
TIME (10)		MAX. PTS.								
		SCORE								
		%								
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.							▨	
		SCORE							▨	
		%							▨	
GEOMETRY (12)		MAX. PTS.								
		SCORE								
		%								

POSTTEST: Section I: IPI Placement Tests

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

IPI Placement Tests

Answer true (T) or false (F):

1. IPI tests give the teacher all the data needed for forming instructional groups. ____________

2. IPI Placement Tests are used to locate the student in each Area in the Continuum. ____________

3. The aide fills in the column marked Placed at Level on the Profile sheet. ____________

4. Students frequently work on a unit while continuing their placement testing. ____________

5. A good classroom test samples the curriculum being taught. ____________

6. IPI Placement Tests are the most specific diagnostic instruments used in IPI. ____________

7. Placement Tests are administered by the side. ____________

8. A student must be placement tested on every level of the Continuum. ____________

9. It is recommended practice to start placement testing on different IPI levels for children in different grade levels. ____________

10. It is the teacher's responsibility to explain directions to the student during placement testing. ____________

What decisions would you make about placement and placement testing in these instances of IPI Placement Test scores? Select the best answer. (You may use the Continuum reference chart to help you.) Assume this is the first placement test score in this area.

1. A student scores 60% in B-Numeration: __________
   - a. Place in B-Numeration
   - b. Test in C-Numeration
   - c. Retest in B-Numeration
   - d. Insufficient information.

2. A student scores 87% in E-Addition: __________
   - a. Place in E-Addition
   - b. Test in F-Addition
   - c. Test in D-Addition
   - d. Insufficient information.

3. A student scores less than 20% in F-Fractions and therefore is tested in E-Fractions: __________
   - a. Place in F-Fractions
   - b. Place in E-Fractions
   - c. Test in D-Fractions
   - d. Insufficient information

4. A student scores 90% in G-Time: __________
   - a. Place in G-Time
   - b. Test in H-Time
   - c. Place in H-Time
   - d. Insufficient information.

5. A student scores 10% in C-Combination of Processes: __________
   - a. Place in C-Combination of Processes
   - b. Test in B-Combination of Processes
   - c. Place in B-Combination of Processes
   - d. Insufficient information.

Level Placement Tests

↓ B ↓ C ↓ D ↓ E ↓ F ↓ G

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒							☒
PLACE VALUE (02)	▨							☒
ADDITION (03)	▨	▨						☒
SUBTRACTION (04)	▨	▨						☒
ADDITION/ SUBTRACTION (34)	☒		▨	▨	▨	▨	▨	☒
MULTIPLICATION (05)	▨	▨	▨					☒
DIVISION (06)	▨	▨	▨					☒
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	☒
COMBINATION OF PROCESSES (07)	▨	▨						☒
FRACTIONS (08)	☒							☒
MONEY (09)	▨					☒	▨	▨
TIME (10)	▨							☒
SYSTEMS OF MEASUREMENT (11)	▨							▨
GEOMETRY (12)	▨							☒
SPECIAL TOPICS (13)	▨	▨	☒	☒	☒	☒	☒	☒

▨ = No existing units

☒ = No Placement Test for this unit

Reference Chart: IPI Mathematics Continuum Placement Tests

ANSWER KEY

POSTTEST: Section I: IPI Placement Tests (pp. 14 - 87)

True-False:

1. F
2. T
3. F
4. T
5. T
6. F
7. F
8. F
9. T
10. T

Select best answer:

1. a
2. b
3. d
4. c
5. a

IPI PRETESTS AND IPI POSTTESTS

IPI PRETESTS AND IPI POSTTESTS

The teacher:

1. Describes IPI Pretests in terms of use and organization.
2. Follows the procedures for IPI Pretesting:
    a. Selecting and assigning appropriate unit.
    b. Selecting and administering Unit Pretest for unit.
    c. Administering Pretest.
    d. Scoring and filling in scores and percentages on Mathematics Prescription Sheet.
    e. Circling on the Prescription Sheet the number of the unit skill(s) requiring prescription(s) and entering these numbers next to the Unit Pretest label.
    f. Moving student on to next unmastered unit if the Unit Pretest indicates mastery of current unit.
3. Describes IPI Posttests in terms of use and organization.
4. Follows the procedures for IPI Posttesting:
    a. Prescribing and administering Unit Posttest to student completing a unit.
    b. Scoring and filling in scores and percentages on Mathematics Prescription Sheet.
    c. Moving student on to next unmastered unit if Unit Posttest indicates mastery of current unit.
    d. Prescribing additional work in the unit if complete mastery is not indicated by the Unit Posttest.

PRETEST: Section II: IPI Pretests and IPI Posttests

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.

2. Use the answer key immediately following the pretest to correct your work.

3. Work on the pages to which you are directed by the pretest answer key.

4. Take the posttest.

5. Use the answer key immediately following the posttest to correct your work.

6. Move on to the next pretest if you have scored 100%.

7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.

8. Use the pretest as a posttest. (Alternate using the two test forms.)

9. Work toward 100% mastery.

Answer true (T) or false (F):

1. There is a Unit Pretest for every unit existing in the Continuum. ____________

2. Unit Pretests and Posttests are parallel tests. ____________

3. A Unit Pretest tests every skill in the unit. ____________

4. The mastery criterion for all unit tests is 85%. ____________

5. In assigning units to a student, a teacher assigns only those units in which he has been placed by means of Placement Tests. ____________

6. A student is pretested on as many assigned units as possible at one time. ____________

7. Each unit skill receives a separate score in a Unit Pretest and Posttest. ____________

8. A student scoring 85% on all skills in a Unit Pretest is moved on to the next unmastered unit. ____________

9. The aide identifies for the teacher those pretested skills which require a prescription. ____________

10. Posttests are used for ongoing evaluation. ____________

The following chart represents the placement Profile of an IPI student. Sequence the units in the Math Continuum that the student must master, in the order in which they must be mastered. Number the units in the proper wequence in the columns marked Sequence for Assigning Unit. You may use the reference chart for the Mathematics Continuum to help you.

MATHEMATICS AREA	Placed at Level	Sequence for Assigning Unit							
		A	B	C	D	E	F	G	H
NUMERATION (01)	E								
PLACE VALUE (02)	G	▨							
ADDITION (03)	F	▨	▨						
SUBTRACTION (04)	E	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	F	▨	▨	▨					
DIVISION (06)	E	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	H	▨	▨						
FRACTIONS (08)	E								
MONEY (09)	D	▨						▨	▨
TIME (10)	E	▨							
SYSTEMS OF MEASUREMENT (11)	F	▨							▨
GEOMETRY (12)	D	▨							
SPECIAL TOPICS (13)	C	▨	▨						

ANSWER KEY

PRETEST: Section II:
IPI Pretests and IPI
Posttests (pp. 94-186)

1. F
2. T
3. T
4. T
5. F
6. F
7. T
8. T
9. F
10. F

Sequence for Assigning Unit

A	B	C	D	E	F	G	H
				5	13	24	35
▨						25	36
▨	▨				14	26	37
▨	▨			6	15	27	38
		▨	▨	▨	▨	▨	39
▨	▨	▨			16	28	40
▨	▨	▨		7	17	29	41
▨	▨	▨	▨	▨	▨	▨	42
▨	▨						43
				8	18	30	44
▨			2	9	19	▨	▨
▨				10	20	31	45
▨					21	32	▨
▨			3	11	22	33	46
▨	▨	1	4	12	23	34	47

IPI PRETESTS

IPI Pretests offer the teacher a distinctly different kind of data than the Placement Tests. The Pretests shift the emphasis from determining the status of the student in the Continuum to diagnosing the specific deficiencies in each skill of each unit. Each Pretest focuses intensively on a particular unit and probes into each skill contained in the unit. It provides the teacher with data on the intra-individual differences in the unit as well as gives the teacher some insight into the causes of the existing deficiencies.

This section will answer the following questions about IPI Pretests:

1. What are IPI Pretests?

2. What are IPI Pretests used for?

3. How many IPI Pretests are there for the IPI Mathematics Continuum?

4. How are IPI Pretests labeled?

5. What does each Unit Pretest consist of?

6. Why are IPI Pretests longer than the Placement Tests?

7. What are the procedures followed in IPI pretesting?

What are IPI Pretests?

IPI Pretests consist of a series of diagnostic tests that measure achievement within the units of the IPI Mathematics Continuum.

What are IPI Pretests used for?

IPI Pretests are used to measure the mastery of all the skills in one particular unit of the Continuum. A Pretest for a single unit is taken by the student when he is ready to enter the unit. The scores tell the teacher which skill(s) the student has yet to learn within the unit.

How many IPI Pretests are there for the Mathematics Continuum?

There is a Pretest for every unit in the Continuum except for Level A (Num., Add., Frac.).

How are the Pretests labeled?

The Pretests are labeled by the units they test.

EXAMPLE: B-Num. Pretest, E-Mult. Pretest.

What does each Unit Pretest consist of?

Each Unit Pretest consists of test items that sample each skill in the unit.

EXAMINE THE THREE UNIT B PRETEST BOOKLETS THAT FOLLOW TO LEARN ABOUT THE ORGANIZATION OF THE PRETESTS:

1. The cover identifies the unit pretested in the booklet.
2. The test items are grouped and identified by the skills they test.
3. Each skill in the unit has a box for a score and a percentage.
4. All skills in the unit are tested by the pretest.

UNIT B PRE-TEST BOOKLETS →

ipl MATHEMATICS PRE-TEST

Name ____________________ Date ____________________

Class ____________________ Number ____________________

LEVEL B, NUMERATION (01)

SKILL 1

TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

Numeration: Directs student to put into sequence, write, count, compare, and read numbers from 1 to 100.

Ring the number that is named by the word.

nine 6 4 10 9	six 10 5 6 3
ten 10 2 5 6	four 2 4 5 7
five 9 6 5 4	eight 6 8 10 7
seven 5 7 9 8	zero 8 9 7 0

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B NUMERATION (01) PRE-TEST

SKILL 2

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Student: This is an oral test.

Teacher: Ask the student to count by 10's from 10 to 60, and from 40 to 100.

SKILL 3

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Student: This is an oral test.

Teacher: Ask the student to count by 1's from 1 to 25; to count by 1's from 34 to 67; to count by 1's from 68 to 85; and to count by 1's from 89 to 100.

B NUMERATION (01) PRE-TEST SKILL 4

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Student: This is an oral test.

Teacher: Point to the listed numbers on the chart and ask the student to "Read these numbers, starting here and ending here."

From 11 to 22
From 34 to 46
From 53 to 67
From 75 to 88

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
51	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

B NUMERATION (01) PRE-TEST SKILL 5

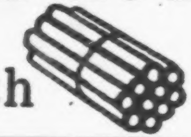
TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

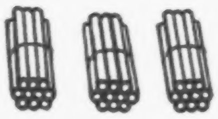
Count from 1 to 100, and write the numbers.

B NUMERATION (01) PRE-TEST SKILL 6

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write the numbers to tell how many sticks are in each row.

(Each  has 10 sticks.)



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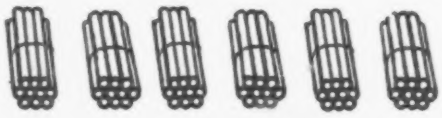

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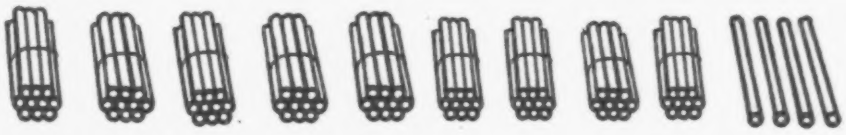

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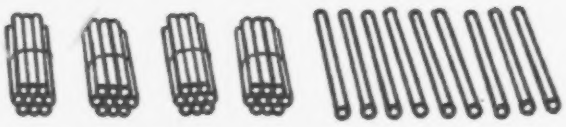

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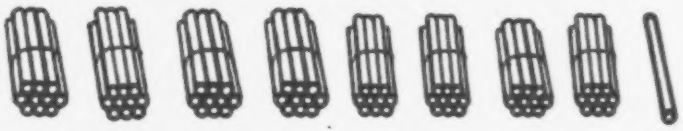


____

Write the number that comes just after each number.

96, ____

59, ____

75, ____

99, ____

40, ____

Write the number that comes just before each number.

____ , 38

____ , 40

____ , 98

____ , 62

____ , 14

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

B NUMERATION (01) PRE-TEST

SKILL 8

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

In each box, ring the largest number.

63 34 65

56 41 38

62 78 77

In each box, ring the smallest number.

11 21 15

51 48 72

SKILL 9

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write > or < in each circle.

19 ○ 27

16 ○ 61

33 ○ 30

59 ○ 58

68 ○ 86

B NUMERATION (01) PRE-TEST SKILL 10

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Count from the arrows and mark the object named by the words.

seventh star → ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡

first square → □ □ □ □ □ □ □ □

ninth dot → • • • • • • • • • •

sixth circle → ○ ○ ○ ○ ○ ○

fifth triangle → △ △ △ △ △ △ △

ipi MATHEMATICS PRE-TEST

Name _______________ Date _______________
Class _______________ Number _______________

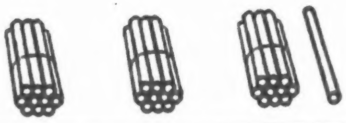
LEVEL B, PLACE VALUE (02)

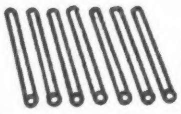
SKILL 1

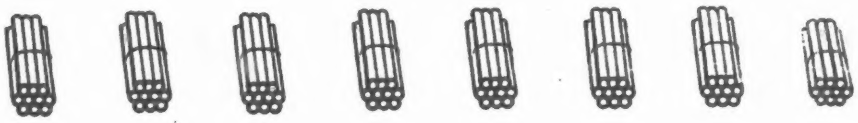
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

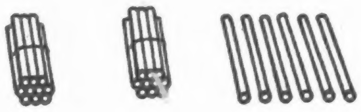
Place Value: Establishes the basis of the decimal system and place value by showing how a two-digit number is made up of tens and ones.

In each row, write the number of tens and ones.


_____ tens and _____ ones


_____ tens and _____ ones


_____ tens and _____ ones


_____ tens and _____ ones

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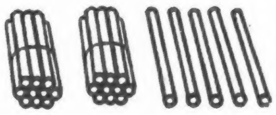
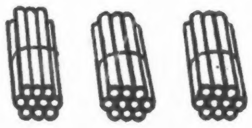
B PLACE VALUE (02) PRE-TEST SKILL 2

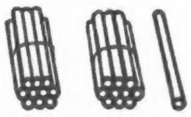
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

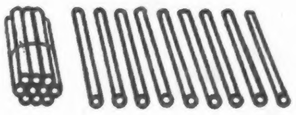
Ring 25 sticks.



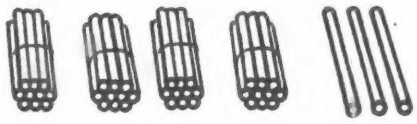


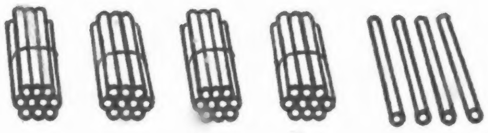
Ring 19 sticks.



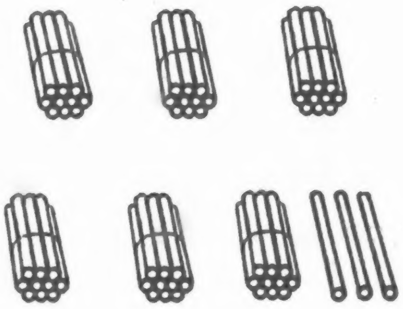


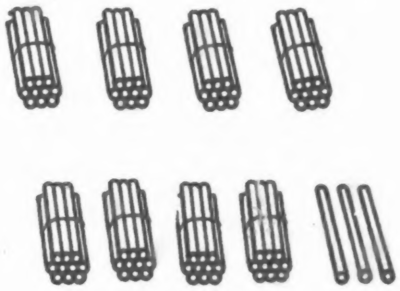
Ring 44 sticks.





Ring 63 sticks.





B PLACE VALUE (02) PRE-TEST SKILL 3

TL. PTS.	
7	100%
NO. OF PTS.	%
6	86
5	71
4	57
3	43
2	29
1	14

Write the number that is in the tens place.

34 ______ 83 ______

Write the number that is in the ones place.

29 ______ 41 ______

Write "ones" or "tens" to show the place of the underlined digit.

$4\underline{7}$ __________ place

$\underline{7}8$ __________ place

$1\underline{2}$ __________ place

ipi MATHEMATICS PRE-TEST

Name ______________________ Date ______________

Class ______________________ Number ______________

LEVEL B, MONEY (09)

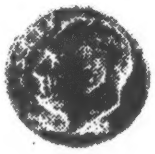
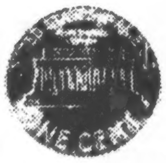
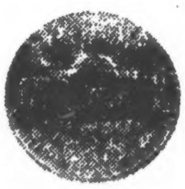
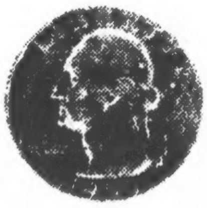
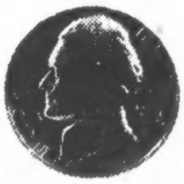
SKILL 1

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

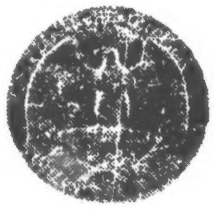
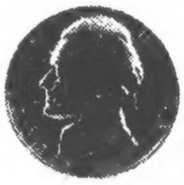
Money: Directs the student to recognize and indicate the value of a penny, a nickel, a dime, a quarter, and combinations of these coins.

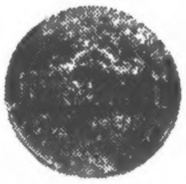
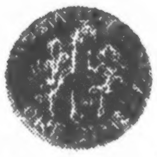
Mark the picture that matches the word.

penny

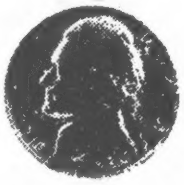
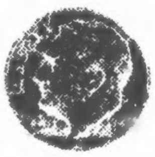
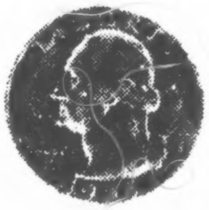
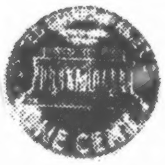
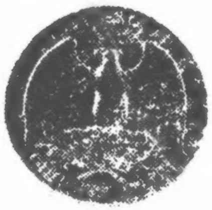






dime

nickel

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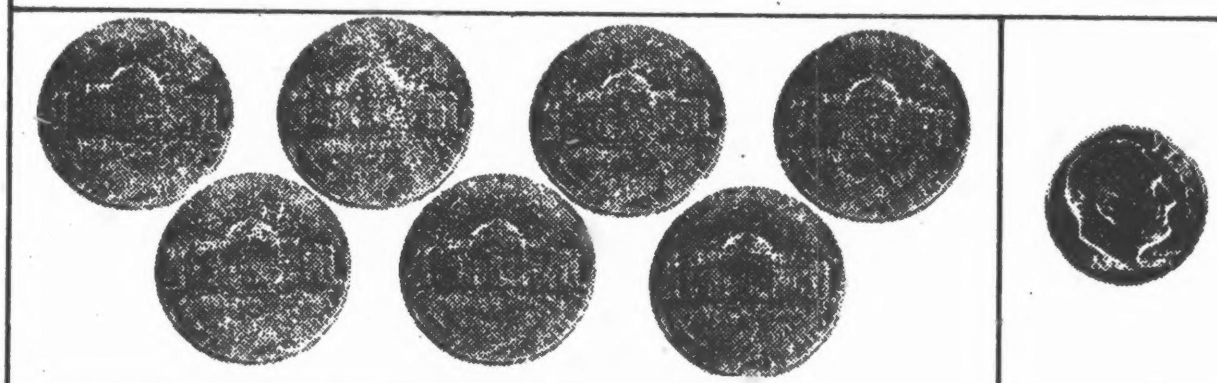
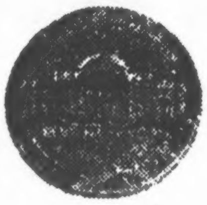
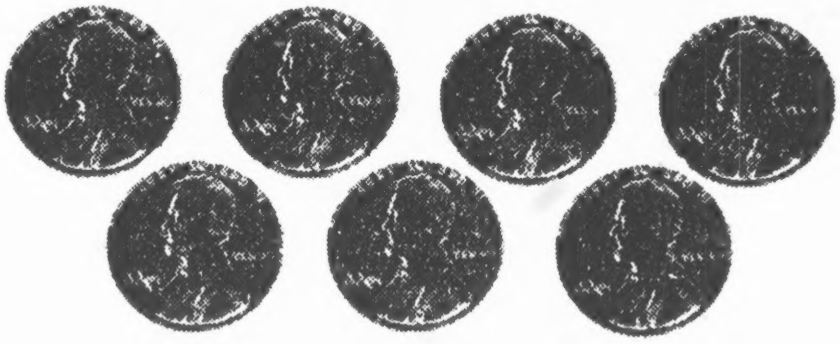
B MONEY (09) PRE-TEST SKILL 2

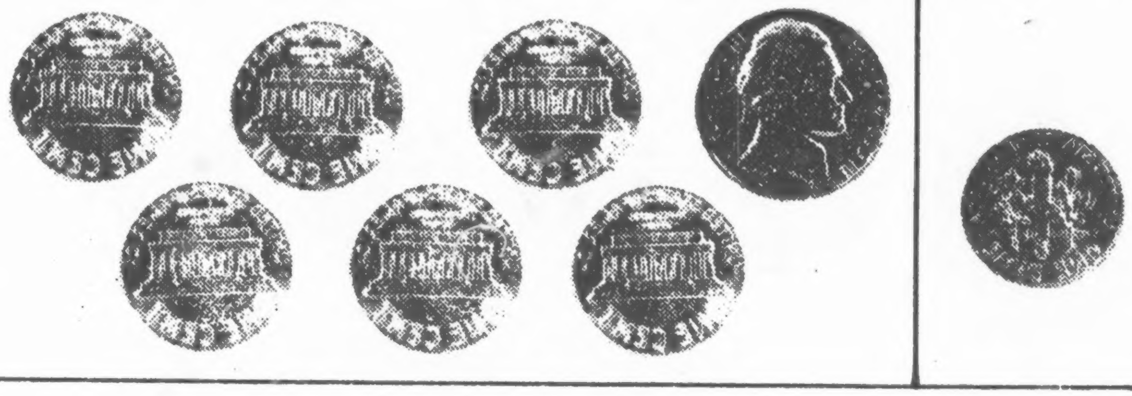
TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

In each row, ring the coins that are equal in value to the first coin.

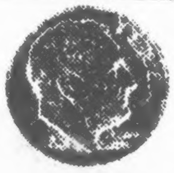




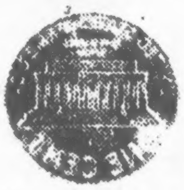




In each row, ring the value of the coin.



5 cents 10 cents 1 cent



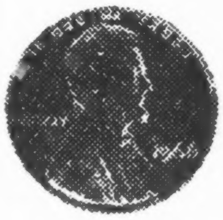
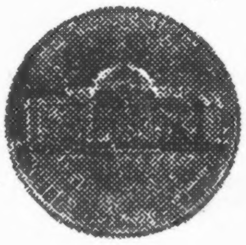
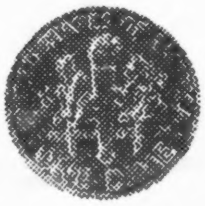
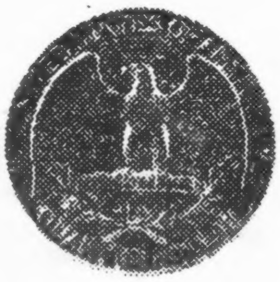
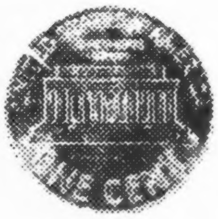
1 cent 10 cents 5 cents

B MONEY (09) PRE-TEST SKILL 3

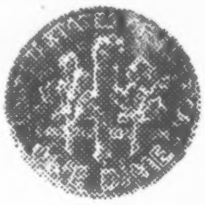
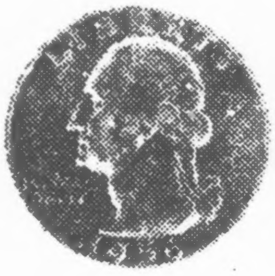
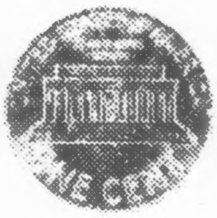
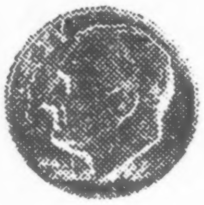
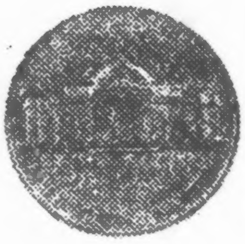
TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

In each row, mark the coin that matches the word.

quarter

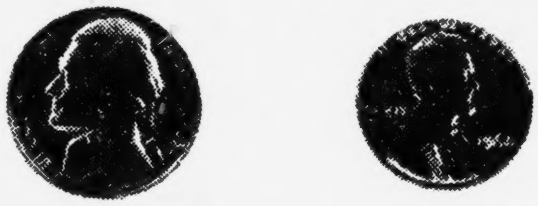
quarter

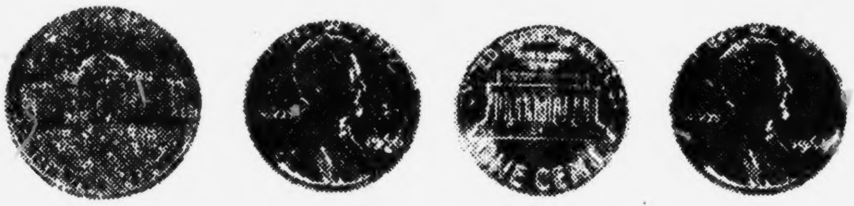
B MONEY (09) PRE-TEST SKILL 4

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

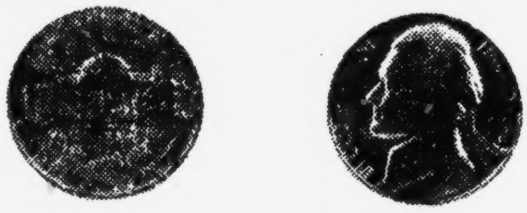
In each row, write the value of the coins shown in the row.



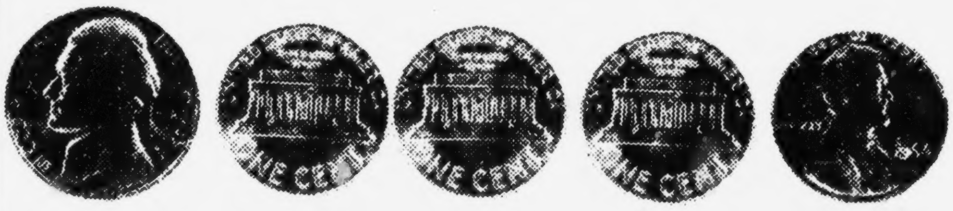
______¢



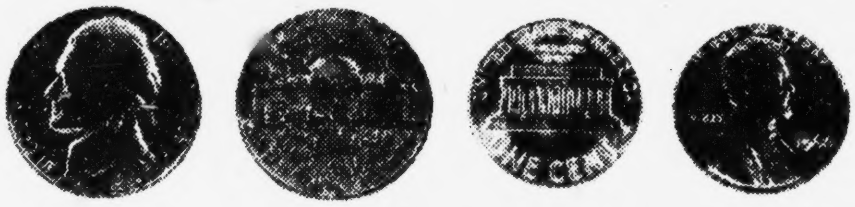
______¢



______¢



______¢



______¢

5

Why are IPI Pretests longer than the Placement Tests?

IPI Pretests test intensively each skill in the units while the Placement Tests test only representative skills in corresponding units on a less intensive basis. Therefore, IPI Pretests measure all skills with more test items. The following exercise illustrates this.

USE YOUR COPY OF LEVEL B PLACEMENT TESTS AND THE THREE UNIT PRETESTS FROM LEVEL B. FILL OUT THE FOLLOWING, USING THE TEST BOOKLET:

	Pretest		B-Placement Tests	
Unit Pretest	Skills Tested	# of Items	Skills Tested	# of Items
B- Place Value				
B-Numeration				
B-Money				

END OF EXERCISE

What are the procedures followed in IPI testing:

In order to pretest a student in a unit, the teacher must first select an appropriate unit for him. This selection is made from the units in the Continuum that are unmastered by the student. The order in which the units are selected and assigned to the student is determined by the student's placement profile and the sequence of the units in the Continuum.

This can be best illustrated by using the following chart and a set of guidelines to interpret the placement profile for Joan Wiley. For the purposes of representing the complete sequencing of units; all Areas (including Special Topics).have been listed on the chart. Though this area is not placement tested, it must be automatically assigned in proper sequence.

USE THIS CHART WITH THE GUIDELINES ON THE NEXT PAGE.

		Sequence for Assigning Units							
MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	C								
PLACE VALUE (02)	B	▨							
ADDITION (03)	C	▨	▨						
SUBTRACTION (04)	C	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	D	▨	▨	▨					
DIVISION (06)	D	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	C	▨	▨						
FRACTIONS (08)	B								
MONEY (09)	C	▨						▨	▨
TIME (10)	C	▨							
SYSTEMS OF MEASUREMENT (11)	B	▨							▨
GEOMETRY (12)	C	▨							
SPECIAL TOPICS (13)	Starts at C	▨	▨						

Example of Sequence for Assigning Units (Based on Joan Wiley's Profile Sheet.)

EXERCISE

THIS EXERCISE WILL HELP YOU BECOME FAMILIAR WITH THE GUIDELINES USED FOR SEQUENCING MATHEMATICS UNITS. A REFERENCE CHART: GUIDELINES FOR SEQUENCING UNITS IS INCLUDED FOR YOUR USE.

THE PROFILE SHEETS OF OUR FIVE STUDENTS ARE REPRESENTED ON PAGES 124 - 131. USE THE GUIDELINES TO SEQUENCE THE UNITS ON THESE CHARTS.

1. Sequence the first three profiles (I, II, III) and check with the answer sheet that follows each profile.

2. Sequence the next two profiles (IV, V) and check with the answer sheet that follows each.

Guidelines for Sequencing Units for Joan Wiley

1. Scan the column marked Placed at Level.

2. Start with the lowest Level appearing in this column.
   In Joan's case, this is Level B.

3. Pick out the first unmastered Area that appears on that Level.
   In Joan's case, this is B-Place Value.

4. Assign this Unit to the student.
   Joan is assigned B-Place Value as a start.

5. Administer the Pretest for this Unit.
   Joan is given B-Place Value Pretest.

   (In a regular IPI class, the student masters the selected unit before going on to the next one. We will assume Joan was given work in B-Place Value and she has mastered B-Place Value. Step 6 would follow.)

6. (Only after this Unit has been mastered.) Scan the column marked Placed at Level, and assign the next unmastered Area at the lwest Level.
   After Joan has mastered B-Place Value, she is assigned B-Fractions.

7. Repeat steps five and six until all unmastered Units at the lowest Level are mastered by student.
   In Joan's case, she completes B-Systems of Measurement and B-Add.-Sub.

8. Move to the next higher Level.

9. On this Level, assign in sequence all Areas still unmastered by the student. These Areas include those started in the preceding Level plus those listed for the higher Level under the column marked Placed at Level.

10. Follow this sequencing in assigning and pretesting units until student has started work in all Areas. From this point on, the student follows the regular wequence of the Continuum.
    In Joan's case, she is following the regular sequence of the Continuum by Level D.

DO THE FOLLOWING EXERCISE.

Reference Chart: Guidelines for Sequencing Units

1. Scan the column marked Placed at Level.

2. Start with the lowest Level appearing in this column.

3. Pick out the first unmastered Area that appears on that Level.

4. Assign this Unit to the student.

5. Administer the Pretest for this Unit.

   (In a regular IPI class, the student masters the selected unit before going on to the next one. We will assume the student was given work in the unit and he has mastered it. Step 6 would follow.)

6. (Only after this Unit has been mastered.) Scan the column marked Placed at Level, and assign the next unmastered Area at the lowest Level.

7. Repeat steps five and six until all unmastered Units at the lowest Level are mastered by student.

8. Move to the next higher Level.

9. On this Level, assign in sequence all Areas still unmastered by the student. These Areas include those started in the preceding Level plus those listed for the higher Level under the column marked Placed at Level.

10. Follow this sequencing in assigning and pretesting units until student has started work in all Areas. From this point on, the student follows the regular sequence of the Continuum.

I. Profile Sheet for John Rocco

MATHEMATICS AREA	Placed at Level	Sequence for Assigning Units A	B	C	D	E	F	G	H
NUMERATION (01)	C								
PLACE VALUE (02)	C	▨							
ADDITION (03)	C	▨	▨						
SUBTRACTION (04)	D	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts on H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	D	▨	▨	▨					
DIVISION (06)	D	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts on H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	C	▨	▨						
FRACTIONS (08)	B								
MONEY (09)	B	▨						▨	▨
TIME (10)	B	▨							
SYSTEMS OF MEASUREMENT (11)	C	▨							▨
GEOMETRY (12)	C	▨							
SPECIAL TOPICS (13)	Starts at C	▨	▨						

Sequence of continuum followed

TURN THE PAGE FOR THE PROPER SEQUENCING.

I. Profile Sheet for John Rocco

		Sequence for Assigning Units							
MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	C			4	14				
PLACE VALUE (02)	C			5	15			Sequence of continuum followed	
ADDITION (03)	C			6	16				
SUBTRACTION (04)	D				17				
ADDITION/ SUBTRACTION (34)	Starts on H								
MULTIPLICATION (05)	D				18				
DIVISION (06)	D				19				
MULTIPLICATION/ DIVISION (56)	Starts on H								
COMBINATION OF PROCESSES (07)	C			7	20				
FRACTIONS (08)	B		1	8	21				
MONEY (09)	B		2	9	22				
TIME (10)	B		3	10	23				
SYSTEMS OF MEASUREMENT (11)	C			11	24				
GEOMETRY (12)	C			12	25				
SPECIAL TOPICS (13)	Starts on C			13	26				

II. Profile Sheet for Philip Johnson

MATHEMATICS AREA	Placed at Level	Sequence for Assigning Units							
		A	B	C	D	E	F	G	H
NUMERATION (01)	D								
PLACE VALUE (02)	D	▨							
ADDITION (03)	D	▨	▨						
SUBTRACTION (04)	D	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	D	▨	▨	▨					
DIVISION (06)	D	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	C	▨	▨						
FRACTIONS (08)	B								
MONEY (09)	D	▨						▨	▨
TIME (10)	C	▨							
SYSTEMS OF MEASUREMENT (11)	C	▨							▨
GEOMETRY (12)	D	▨							
SPECIAL TOPICS (13)	Starts at C	▨	▨						

Sequence of continuum is followed

TURN THE PAGE FOR THE PROPER SEQUENCING.

II. Profile Sheet for Philip Johnson

MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
		Sequence for Assigning Units							
NUMERATION (01)	D				7				
PLACE VALUE (02)	D	▨			8				
ADDITION (03)	D	▨	▨		9				
SUBTRACTION (04)	D	▨	▨		10				
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	D	▨	▨	▨	11				
DIVISION (06)	D	▨	▨	▨	12				
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	C	▨	▨	2	13				
FRACTIONS (08)	B		1	3	14				
MONEY (09)	D	▨			15			▨	▨
TIME (10)	C	▨		4	16				
SYSTEMS OF MEASUREMENT (11)	C	▨		5	17				▨
GEOMETRY (12)	D	▨			18				
SPECIAL TOPICS (13)	Starts at C	▨	▨	6	19				

Sequence of continuum is followed

(If you have completed Profile Sheets I and II accurately, skip II and IV and do V only.)

III. Profile Sheet for Joan Morgan

Sequence for Assigning Units

MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	E								
PLACE VALUE (02)	D	▨							
ADDITION (03)	D	▨	▨						
SUBTRACTION (04)	D	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	E	▨	▨	▨					
DIVISION (06)	E	▨	▨	▨					
MULTIPLICATION/ DIVISION (58)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	C	▨	▨						
FRACTIONS (08)	C								
MONEY (09)	E	▨						▨	▨
TIME (10)	C	▨							
SYSTEMS OF MEASUREMENT (11)	D	▨							▨
GEOMETRY (12)	D	▨							
SPECIAL TOPICS (13)	Starts at C	▨	▨						

Sequence of continuum is followed

TURN PAGE FOR THE PROPER SEQUENCING.

III. Profile Sheet for Joan Morgan

Sequence for Assigning Units

MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	E					14			
PLACE VALUE (02)	D				5	15			
ADDITION (03)	D				6	16			
SUBTRACTION (04)	D				7	17			
ADDITION/ SUBTRACTION (34)	Starts at H								
MULTIPLICATION (05)	E					18			
DIVISION (06)	E					19			
MULTIPLICATION/ DIVISION (56)	Starts at H								
COMBINATION OF PROCESSES (07)	C			1	8	20			
FRACTIONS (08)	C			2	9	21			
MONEY (09)	E					22			
TIME (10)	C			3	10	23			
SYSTEMS OF MEASUREMENT (11)	D				11	24			
GEOMETRY (12)	D				12	25			
SPECIAL TOPICS (13)	Starts at C			4	13	26			

Sequence of continuum is followed

IV. Profile Sheet for Joseph Howard

Sequence for Assigning Units

MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	E								
PLACE VALUE (02)	D	▨							
ADDITION (03)	F	▨	▨						
SUBTRACTION (04)	F	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	E	▨	▨	▨					
DIVISION (06)	E	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	D	▨	▨						
FRACTIONS (08)	D								
MONEY (09)	F	▨						▨	▨
TIME (10)	F	▨							
SYSTEMS OF MEASUREMENT (11)	D	▨							▨
GEOMETRY (12)	C	▨							
SPECIAL TOPICS (13)	C	▨	▨						

Sequence of continuum is followed

TURN THE PAGE FOR THE PROPER SEQUENCING.

IV. Profile Sheet for Joseph Howard

MATHEMATICS AREA	Placed at Level	Sequence for Assigning Units							
		A	B	C	D	E	F	G	H
NUMERATION (01)	E					9	18		
PLACE VALUE (02)	D	▨			3	10	19		
ADDITION (03)	F	▨	▨				20		
SUBTRACTION (04)	F	▨	▨				21		
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	E	▨	▨	▨		11	22		
DIVISION (06)	E	▨	▨	▨		12	23		
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	D	▨	▨		4	13	24		
FRACTIONS (08)	D				5	14	25		
MONEY (09)	F	▨					26	▨	▨
TIME (10)	F	▨					27		
SYSTEMS OF MEASUREMENT (11)	D	▨			6	15	28		▨
GEOMETRY (12)	C	▨		1	7	16	29		
SPECIAL TOPICS (13)	C	▨	▨	2	8	17	30		

Sequence of continuum is followed

V. Profile Sheet for Kate Brown

		Sequence for Assigning Units							
MATHEMATICS AREA	Placed at Level	A	B	C	D	E	F	G	H
NUMERATION (01)	E								
PLACE VALUE (02)	G	▨							
ADDITION (03)	F	▨	▨						
SUBTRACTION (04)	E	▨	▨						
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	F	▨	▨	▨					
DIVISION (06)	E	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	H	▨	▨						
FRACTIONS (08)	E								
MONEY (09)	D	▨						▨	▨
TIME (10)	E	▨							
SYSTEMS OF MEASUREMENT (11)	F	▨							▨
GEOMETRY (12)	D	▨							
SPECIAL TOPICS (13)	C	▨	▨						

TURN THE PAGE FOR THE PROPER SEQUENCING.

V. Profile Sheet for Kate Brown

MATHEMATICS AREA	Placed at Level	Sequence for Assigning Units A	B	C	D	E	F	G	H
NUMERATION (01)	E					5	13	24	35
PLACE VALUE (02)	G	▨						25	36
ADDITION (03)	F	▨	▨				14	26	37
SUBTRACTION (04)	E	▨	▨			6	15	27	38
ADDITION/ SUBTRACTION (34)	Starts at H			▨	▨	▨	▨	▨	39
MULTIPLICATION (05)	F	▨	▨	▨			16	28	40
DIVISION (06)	E	▨	▨	▨		7	17	29	41
MULTIPLICATION/ DIVISION (56)	Starts at H	▨	▨	▨	▨	▨	▨	▨	42
COMBINATION OF PROCESSES (07)	H	▨	▨						43
FRACTIONS (08)	E					8	18	30	44
MONEY (09)	D	▨			2	9	19	▨	▨
TIME (10)	E	▨				10	20	31	45
SYSTEMS OF MEASUREMENT (11)	F	▨					21	32	▨
GEOMETRY (12)	D	▨			3	11	22	33	46
SPECIAL TOPICS (13)	C	▨	▨	1	4	12	23	34	47

Up to this point, the teacher has picked out the unit in which the student is to work and has also administered the appropriate Unit Pretest. The aide corrects the pretest and enters the student's pretests scores and percentages on a sheet called a Mathematics Prescription Sheet.

Examine the following Mathematics Prescription Sheets:

1. Locate the box marked Pre and Post Test Scores on Prescription Sheet #1. ⟶

2. Read the explanations listed for the first four columns. The aide enters this information for you, as well as student's name, grade, etc. on the top.

3. Note that the mastery criterion for each skill in a pretest is 85%.

4. Examine Prescription Sheets #2-6 and the discussion that follows each to learn how the teacher uses pretest scores to make instructional decisions.

ipi MATHEMATICS PRESCRIPTION SHEET #1

STUDENT NAME John Doe
STUDENT NUMBER ____________
SCHOOL STAMP ____________

GRADE 4 ROOM 12 UNIT C-Numeration

Date pretest corrected

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

All skill numbers entered

Maximum number of points that can be earned for each skill.

Actual number of points earned for each skill.

% scored on each skill.

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
	DATES								

Date scored

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MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET #2

STUDENT NAME Joan Wiley
STUDENT NUMBER
SCHOOL STAMP

GRADE 3 ROOM UNIT B - P.V.

UNIT DATES	
UNIT BEGAN	1-23-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	3	60						
②	5	2	40						
DATES									

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← Prescription Sheet #2: Joan Wiley

B-Place Value Pretest

1. If a B-Place Value Pretest is available, obtain a copy. Inspect the test items Joan did.

2. Prescriptions Sheet #2 is returned to the teacher by the aide. Joan has been pretested by the teacher on the two skills in B-Place Value and has scored below 85% in each. This is entered in the Pre and Posttest Scores box by the aide.

3. The teacher identifies the skills that require a prescription by circling the X before the skill numbers one and two.
The teacher also enters skill numbers one and two next to the Unit Pretest label on the top of the page.

ipi MATHEMATICS PRESCRIPTION SHEET #3

STUDENT NAME Joan Morgan STUDENT NUMBER

SCHOOL STAMP

Mastery Pull

GRADE 5 ROOM UNIT C-Money

UNIT DATES	
UNIT BEGAN	1-18-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	5	100						
2	6	5	86						
3	7	6	88						
DATES									

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Prescription Sheet #3: Joan Morgan

E-Money

1. If available, obtain a copy of E-Money Pretest. Inspect the test items Joan did.

2. Prescription Sheet #3 is returned to the teacher by the aide. Joan has been pretested by the teacher on the three skills in E-Money and has scored over 85% in each. This is entered in the appropriate box by the aide.

3. The teacher identifies the skills that require a prescription by circling the skill numbers. Since all scores are over 85%, none need a prescription. The student will move to another unit. This sheet is no longer needed.
   The teacher merely marks Mastery in the upper right hand corner to tell the aide to file the sheet.

ipi MATHEMATICS PRESCRIPTION SHEET #4

STUDENT NAME Joseph Howard STUDENT NUMBER ____________

SCHOOL STAMP ____________

GRADE 4 ROOM ________ UNIT D-Spec. Topics

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	10	4	40						
②	5	4	80						
③	5	2	40						
DATES									

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Prescription Sheet #4: Joseph Howard

D-Special Topics

1. If available, obtain a copy of D-Special Topics. Inspect the items Joseph did.

2. Joseph has scored below 85% on all three skills in D-Special Topics.

3. The teacher circles the skill numbers 1, 2 and 3, since they need a prescription, and enters these skill numbers next to the Unit Pretest label at the top of the page.

ipi
MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET #5

STUDENT NAME John Rocco
STUDENT NUMBER
SCHOOL STAMP

GRADE 2
ROOM
UNIT B-Fractions

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	6	3	50						
DATES									

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Prescription Sheet #5: John Rocco

B-Fractions

1. If available, obtain a copy of B-Fractions.
   Inspect the items John did.

2. John has scored below 85% on the skill pretested in B-Fractions.

3. The teacher circles the skill numbers before this skill since it needs a prescription and enters the skill number next to the Unit Pretest label at the top of the page.

FOR THE NEXT TWO SHEETS (PRESCRIPTION SHEETS #6 and #7)

1. Circle those skills requiring a prescription.

2. Enter these skill numbers next to the Unit Pretest label.

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MATHEMATICS PRESCRIPTION SHEET #6

STUDENT NAME Kate Brown STUDENT NUMBER ____________

SCHOOL STAMP ____________

GRADE ________ ROOM________ UNIT G-COP

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	0	0						
2	5	5	100						
3	6	6	100						
4	5	3	60						
5	5	4	80						
Turn page for answers									
DATES									

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ipi MATHEMATICS PRESCRIPTION SHEET #7

STUDENT NAME Philip Johnson STUDENT NUMBER

SCHOOL STAMP

GRADE 5 ROOM UNIT D-Div.

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	4	80						
2	10	7	70						
3	5	5	100						
4	20	8	40						
5	6	6	100						
6	6	4	67						
7	4	1	25						
DATES									

Turn page for answers

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET #6

STUDENT NAME Kate Brown
STUDENT NUMBER Answer Sheet
SCHOOL STAMP ____________
GRADE ________ ROOM ________ UNIT G-C O-P

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	0	0						
2	5	5	100						
3	6	6	100						
④	5	3	60						
⑤	5	4	80						
DATES									

P1 – 1968

ipi MATHEMATICS PRESCRIPTION SHEET #7

STUDENT NAME Philip Johnson STUDENT NUMBER Answer Sheet

SCHOOL STAMP ____________

GRADE 5 ROOM ______ UNIT D-Div.

UNIT DATES	
UNIT BEGAN	1-8-69
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS									CURRICULUM TEST			
									PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT		NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
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07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	4	80						
②	10	7	70						
3	5	5	100						
④	20	8	40						
5	6	6	100						
⑥	6	4	67						
⑦	4	1	25						
DATES									

P1 – 1968

TEACHING IN IPI

PROCEDURES FOR PRETESTING

Teacher	Student	Aide
1. Assigns to the student a unit selected from the placement Profile.		
2. Administers the Pretest for the unit.	Takes assigned Unit Pretest.	
a. Reads directions as needed.	Gives completed Pretest to aide.	Scores Pretests.
		Fills in a Prescription Sheet for student.
		Enters scores and % on Prescription Sheet.
3. Examines Pretest scores.		
a. Identifies the skill(s) in the unit requiring a prescription (under 85%).	Waits for prescription designed to teach unmastered skills.	
b. Moves child to next unmastered unit when all the scores in the pretested unit are over 85%.	Takes the next assigned Unit Pretest.	Scores Pretest.
	Gives completed Pretest to aide.	Starts new Prescription Sheet
		Fills in scores and % on Prescription Sheet.
4. Repeats steps 1-3 whenever student demonstrates mastery of last assigned unit.	Repeats corresponding steps.	Repeats corresponding steps.

EXERCISE

RESUME WORKING IN THE CONTINUUM.

You are ready to resume working in the Continuum by selecting a unit to be mastered. You will act as teacher, student and aide to familiarize yourself with these roles in IPI pretesting.

1. Continue placement testing until you are placed in one unit.
2. Obtain the Unit Pretest for this unit and do the test items as directed.
3. Score the tests by using the Teacher Edition of the test.
4. Fill out a Mathematics Prescription Sheet for yourself and enter the scores and percentages for the Unit Pretest.
5. Circle those numbers for the skills you must master (under 85%), and insert these numbers next to the Unit label at the top of the page.
6. Continue placement testing as needed.

IPI POSTTESTS

The Unit Postest is a parallel form of the Unit Pretest. Both are designed to assess mastery of all the skills within a particular unit. Each Posttest focuses intensively on a particular unit and tests each skill to determine complete mastery of the unit.

This section will answer the following questions about IPI Posttests:

1. What are IPI Posttests?
2. What are IPI Posttests used for?
3. How many Posttests are there for the IPI Mathematics Continuum?
4. How are IPI Posttests labeled?
5. What does each Unit Posttest consist of?
6. Can the Pretest and Posttest of a particular unit be used interchangeably?
7. What are the procedures followed in IPI posttesting?

What are IPI Posttests?

IPI Posttests consist of a series of achievement tests that measure mastery of all the skills in the unit.

What are IPI Posttests used for?

IPI Posttests are used to measure mastery of all the skills in one particular unit of the Continuum after the student has completed his prescribed work in the unit. Unlike the pretest which is used to identify deficiencies in unit skills before instruction is started, the posttest is used to determine mastery of the unit skills after instruction is given. Determination of unit mastery is essential at this point.

Posttest scores of 85% and over on all skills indicate to the teacher that the student is ready to be assigned another unit. Scores under 85% on any one skill indicate a lack of unit mastery and additional instruction on those deficient skills must be prescribed.

How many Posttests are there for the IPI Mathematics Continuum?

There is a Posttest that parallels the Pretest for every unit in the Continuum except Level A (Num., Add., Frac.)

How are IPI Posttests labeled?

The Posttests are labeled by the units they test.

EXAMPLE: B-Num. Posttest, E-Mult. Posttest.

What does each Unit Posttest consist of?

Each Unit Posttest consist of test items that sample each skill in the unit. The test items in a Unit Posttest parallel the test items of the Pretest for the same unit.

USE THE THREE UNIT POSTTESTS (B-NUM., P.V., M) THAT FOLLOW. EXAMINE THE POSTTEST BOOKLETS TO LEARN ABOUT THE ORGANIZATION OF THE POSTTESTS:

1. The cover identifies the unit posttested in the booklet.
2. The test items are grouped and identified by the skills they test.
3. Each skill in the unit has a box for a score and a percentage.
4. All skills in the unit are tested by the posttest.

UNIT B POST - TEST BOOKLETS →

ipi MATHEMATICS POST-TEST

Name ______________________ Date ______________
Class ______________________ Number ____________

LEVEL B, NUMERATION (01)

SKILL 1

TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

Numeration: Directs student to put into sequence, write, count, compare, and read numbers from 1 to 100.

Ring the number that is named by the word.

ten

6 4 10 9

three

10 5 6 3

two

10 2 5 6

six

2 4 5 6

four

9 6 5 4

zero

0 6 8 10

five

5 7 9 8

seven

8 9 7 0

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B NUMERATION (01) POST-TEST

SKILL 2

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Student: This is an oral test.

Teacher: Ask the student to count by 10's from 10 to 50, and from 60 to 100.

SKILL 3

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Student: This is an oral test.

Teacher: Ask the student to count by 1's from 15 to 37; to count by 1's from 38 to 59; to count by 1's from 60 to 88; and to count by 1's from 89 to 100.

B NUMERATION (01) POST-TEST SKILL 4

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Student: This is an oral test.

Teacher: Point to the listed numbers on the chart and ask the student to "Read these numbers, starting here and ending here."

From 8 to 21
From 32 to 48
From 51 to 69
From 73 to 92

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

B NUMERATION (01) POST-TEST SKILL 5

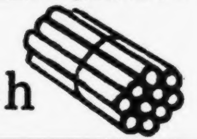
Count from 1 to 100, and write in the numbers.

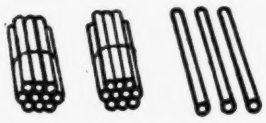
TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

B NUMERATION (01) POST-TEST SKILL 6

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write numbers to tell how many sticks are in each row.

(Each  has 10 sticks.)



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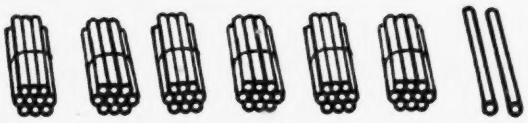

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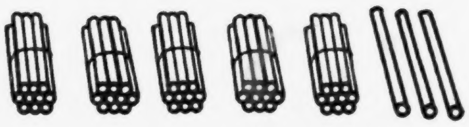

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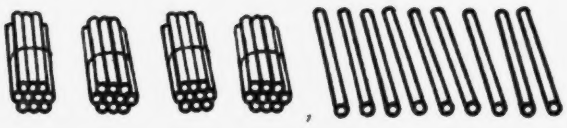

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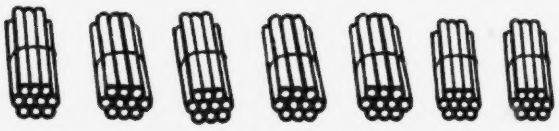


______

B NUMERATION (01) POST-TEST SKILL 7

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

Write the number that comes just after each number.

82, ____

57, ____

39, ____

63, ____

95, ____

Write the number that comes just before each number.

____ , 22

____ , 46

____ , 74

____ , 19

____ , 93

B NUMERATION (01) POST-TEST

SKILL 8

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

In each box, ring the largest number.

65 34 43

56 63 72

89 91 77

In each box, ring the smallest number.

31 53 49

78 93 84

SKILL 9

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Write > or < in each circle.

39 ○ 44

14 ○ 41

78 ○ 80

49 ○ 47

97 ○ 79

B NUMERATION (01) POST-TEST SKILL 10

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Count from the arrows and mark the ojbect named by the words.

sixth star → ✡ ✡ ✡ ✡ ✡ ✡ ✡

second square → □ □ □ □ □ □ □

first dot → • • • • • • •

third circle → ○ ○ ○ ○ ○ ○

fourth triangle → △ △ △ △ △ △

ipi MATHEMATICS POST-TEST

Name ______________________ Date ______________

Class ______________________ Number ______________

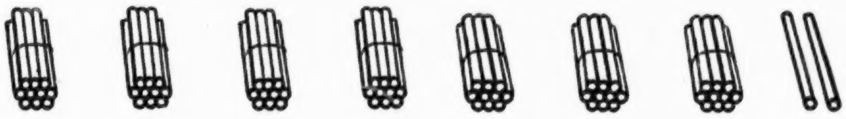
LEVEL B, PLACE VALUE (02)

SKILL 1

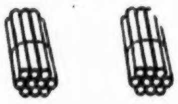
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Place Value: Establishes the basis of the decimal system and place value by showing how a two-digit number is made up of tens and ones.

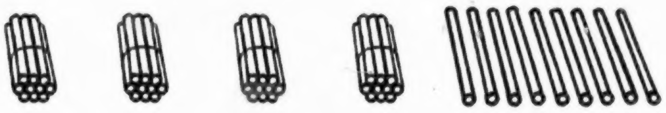
In each row, write the number of tens and ones.



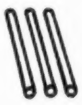
______ tens and ______ ones



______ tens and ______ ones



______ tens and ______ ones



______ tens and ______ ones

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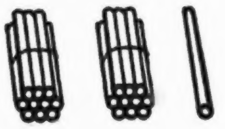
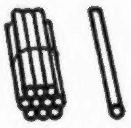
B PLACE VALUE (02) POST-TEST SKILL 2

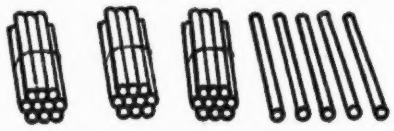
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

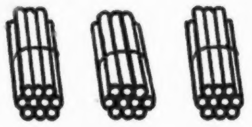
Ring 11 sticks.



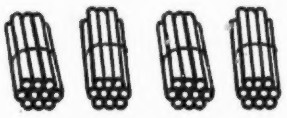


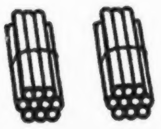
Ring 35 sticks.



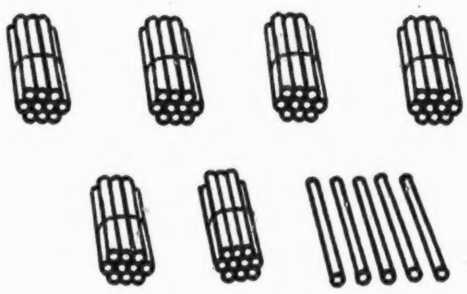


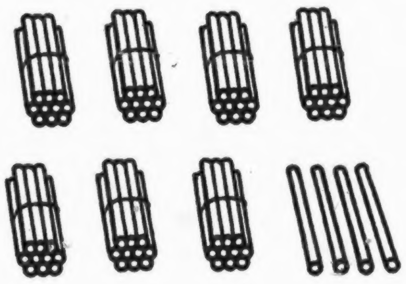
Ring 20 sticks.





Ring 74 sticks.





B PLACE VALUE (02) POST-TEST SKILL 3

TL. PTS	
7	100%
NO. OF PTS.	%
6	85
5	71
4	57
3	43
2	29
1	14

Write the number that is in the tens place.

72 ______ 37 ______

Write the number that is in the ones place.

27 ______ 54 ______

Write "ones" or "tens" to show the place of the underlined digit.

2$\underline{4}$ __________ place

7$\underline{1}$ __________ place

$\underline{1}$9 __________ place

ipi MATHEMATICS POST-TEST

Name ______________________ Date ______________

Class ______________________ Number ______________

LEVEL B, MONEY (09)

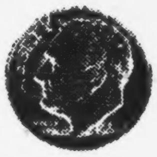
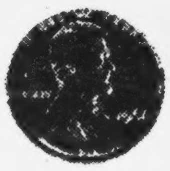
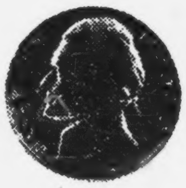
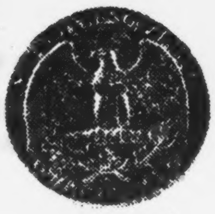
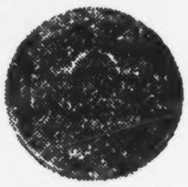
SKILL 1

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

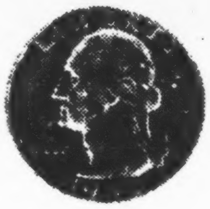
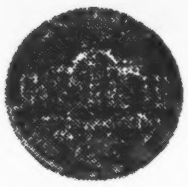
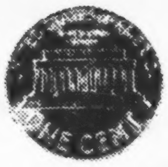
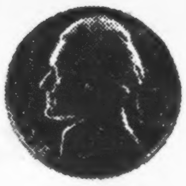
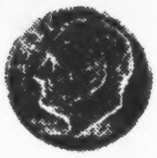
Money: Directs the student to recognize and indicate the value of a penny, a nickel, a dime, a quarter, and combinations of these coins.

Mark the picture that matches the word.

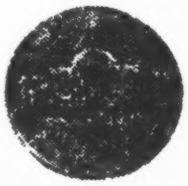
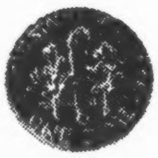
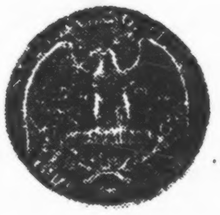
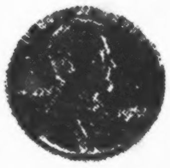
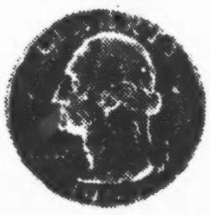
penny

dime

nickel

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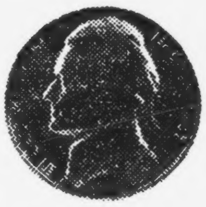
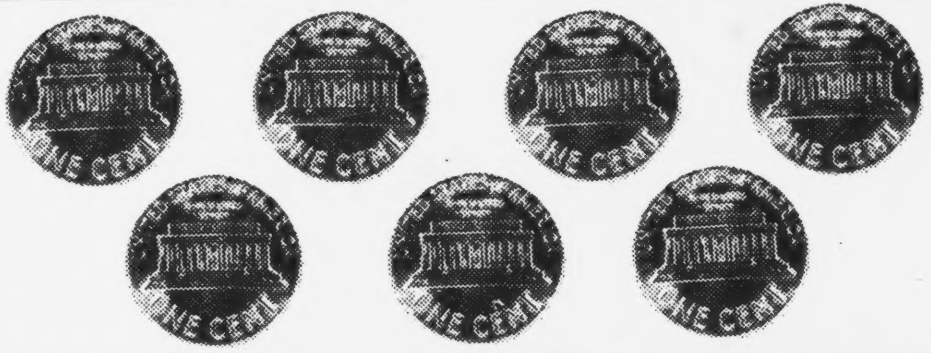
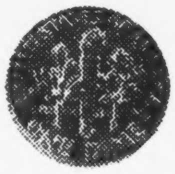
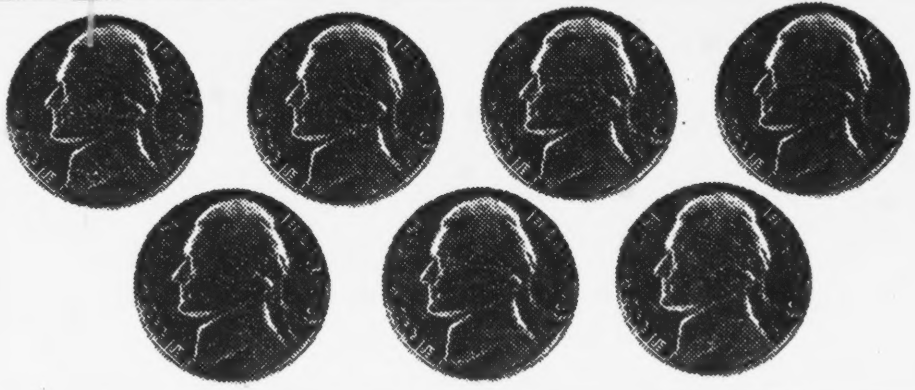
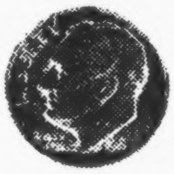
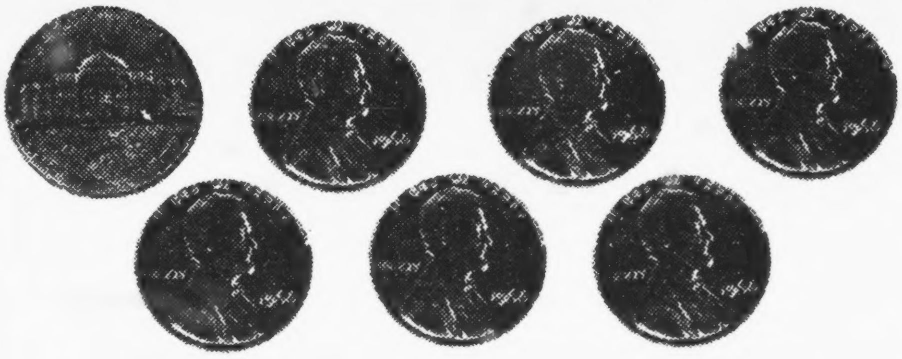
B MONEY (09) POST-TEST

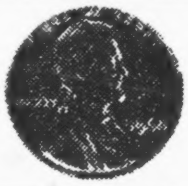
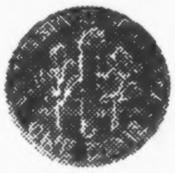
SKILL 2

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

In each row, ring the coins that are equal in value to the first coin.

In each row, ring the value of the coin.

	1 cent	10 cents	5 cents
	5 cents	10 cents	1 cent

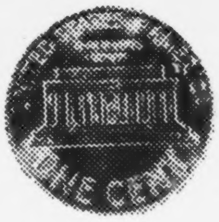
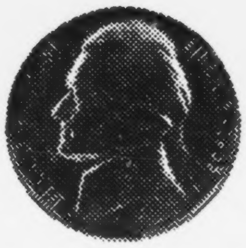
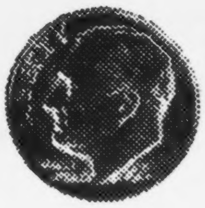
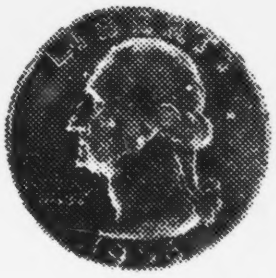
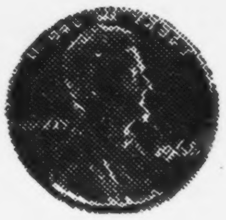
B MONEY (09) POST-TEST

SKILL 3

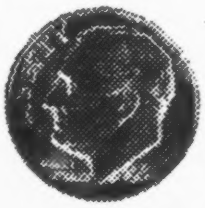
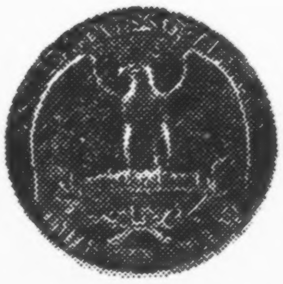
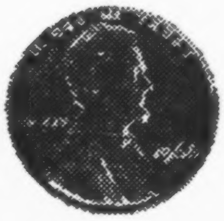
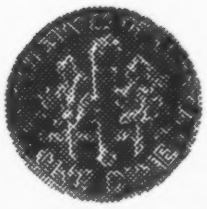
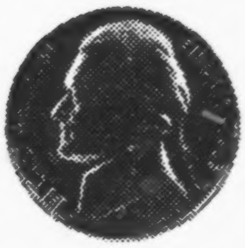
TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

In each row, mark the coin that matches the word.

quarter

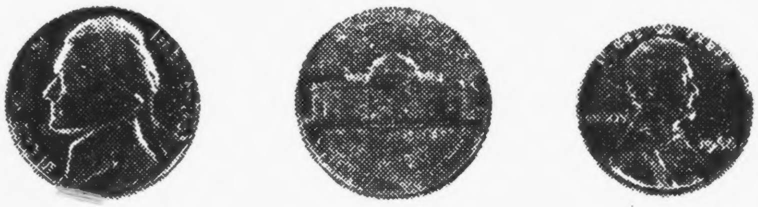
quarter

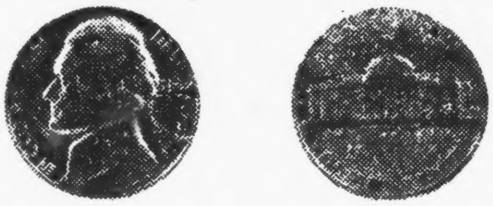
B MONEY (09) POST-TEST SKILL 4

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

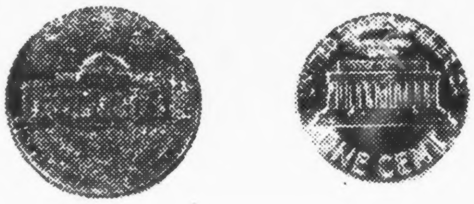
In each row, write the value of the coins shown in the row.



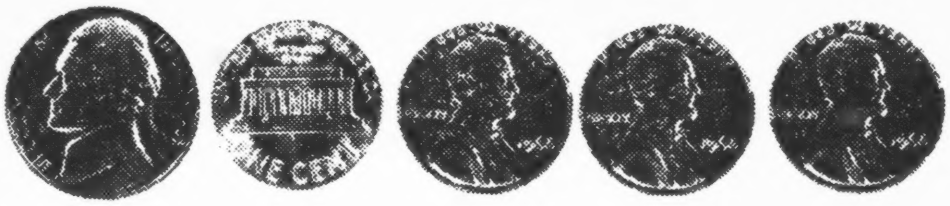
_____¢



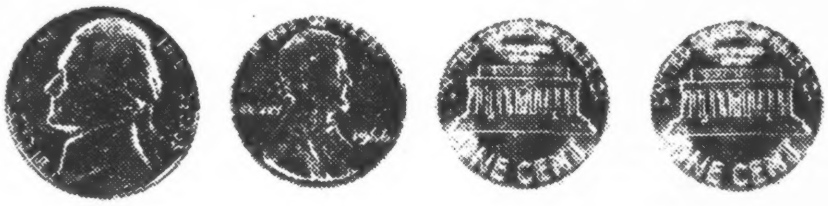
_____¢



_____¢



_____¢



_____¢

NOW, USE THE THREE UNIT PRETESTS (INCLUDED EARLIER) THAT PARALLEL THE THREE UNIT POSTTESTS. COMPARE THE PRETESTS AND POSTTESTS FOR EACH UNIT TO LEARN ABOUT THEIR SIMILARITIES:

1. The Pretest and Posttest for the same unit test all the skills in the unit.
2. The Pretest and Posttest for the same unit have the same number of test items for each skill.
3. The Pretest and Posttest for the same unit use the same kind of test items for each skill.
4. The only difference between a Pretest and Posttest for same unit exists in the label used to identify them.

Can the Pretest and Posttest of a particular unit be used interchangeably?

The Pretest and Posttest of a particular unit can be used interchangeably since they are constructed in parallel form and test the same skills.

Actually in IPI, Pretests and Posttests are used interchangeably on one occasion. This occurs when a student scores under 85% on a Unit Posttest:

1. The posttest, which was originally administered to determine unit mastery, is examined to diagnose the persistent difficulty the student is having with the unit skill(s). This diagnostic information will help the teacher prescribe additional instruction.

2. Upon completion of this additional instruction, the teacher uses the Unit Pretest as a Unit Posttest to measure unit mastery. This is done to avoid re-administering the same test after a short interval of time.

What are the procedures followed in IPI posttesting?

The teacher decides to posttest the student on an entire unit when there is definite information that the student will most probably perform successfully on the test. This information comes from two sources:

1. Performance in prescribed activities which allow the teacher to observe and measure the change in the behaviors on which the student will be tested.

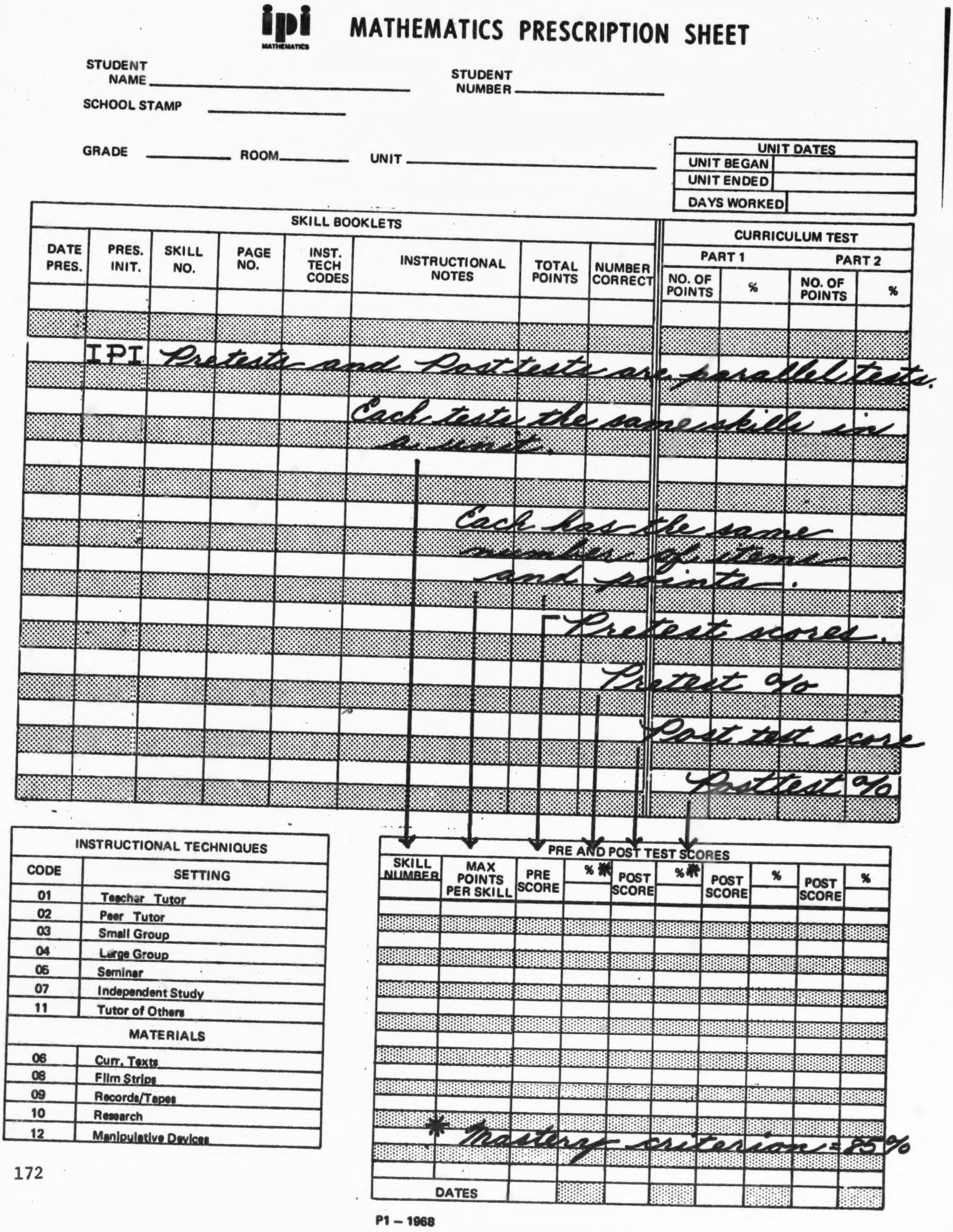
2. Performance on achievement tests prescribed during instruction which measure separately the mastery of each skill being learned.

When the teacher judges that the student gives indications of successful performance in his prescribed activities, and he has scored over 85% in all the individual skill tests used in ongoing instruction, the appropriate Unit Posttest is given to the student. This Unit Posttest is scored by the aide who also enters the scores and percentages in the Pre and Posttest Scores box on the student's Mathematics Prescription Sheet. When this sheet is returned to the teacher, the pretest and posttest scores appear side by side.

Examine the following Mathematics Prescription Sheet: →

1. Locate the box marked Pre and Posttest Scores on the Prescription Sheet.

2. Read the explanations listed on the Sheet. Note the four extra columns on the right provide space for additional psottest scores and percentages. The scores and percentages resulting from additional posttesting are entered here.



ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME ____________________ STUDENT NUMBER ____________

SCHOOL STAMP ____________

GRADE ________ ROOM ________ UNIT ____________________

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS

DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	CURRICULUM TEST PART 1 NO. OF POINTS	PART 1 %	PART 2 NO. OF POINTS	PART 2 %

IPI *Pretests and Post tests are parallel tests.*

Each tests the same skills in a unit.

Each has the same number of items and points.

Pretest scores.

Pretest %

Post test score

Posttest %

INSTRUCTIONAL TECHNIQUES

CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES

SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	% *	POST SCORE	% *	POST SCORE	%	POST SCORE	%
DATES									

* *Mastery criterion = 85%*

P1 – 1968

Examine the following Mathematics Prescription Sheets for the students we have followed through placement testing and pretesting. For purposes of explanation, we will suppose that each student has completed the prescription(s) assigned to him and he has been posttested on the unit. The posttest scores are entered alongside the pretest scores.

1. Examine Prescription Sheets 1-5 and read the discussion that follows each to learn how the teacher uses posttest scores to make instructional decisions.

2. Note that Joan Morgan's Prescription Sheet (E-Money) is not included. Her pretest scores indicated mastery of unit and she was moved to the next unmastered unit in the Continuum.

ipi MATHEMATICS PRESCRIPTION SHEET #1

STUDENT NAME Joan Wiley
STUDENT NUMBER ______
SCHOOL STAMP ______

Mastery Roll

GRADE 3 ROOM ______ UNIT B - P.V.

UNIT DATES	
UNIT BEGAN	10-6
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
Prescription for Skill 1 is								Mastery of			
entered here.								Skill 1 is			
								tested here			
Prescription for Skill 2 is								Mastery of			
entered here.								Skill 2 is			
								tested here.			

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
06	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	3	60	5	100				
2	5	2	40	5	100				
DATES									

P1 — 1968

Prescription Sheet #1: Joan Wiley

B-Place Value Posttest

1. Obtain a copy of B-Place Value Posttest.
   Inspect the items Joan did.

2. The teacher has assigned Joan a learning prescription for Skill 1. The teacher has observed Joan's performance in the prescription and has tested her on Skill 1. Once observation and testing indicate Joan has mastered Skill 1, the teacher repeats the process with Skill 2. At this point, Joan has shown she has mastered all the assigned skills. She is ready for the Unit Posttest.

3. The teacher then prescribes B-Place Value Posttest and administers the test to Joan.

4. The aide scores the test and enters the posttest scores and percentages on the Prescription Sheet. The Sheet is returned to the teacher.

5. Joan has scored over 85% on each skill in the Posttest. Therefore, she is ready to move on to the next unmastered unit. In Joan's case, the teacher will assign B-Fractions Pretest to start her in the next unit found in her Student Profile. The teacher marks the sheet Mastery to tell the aide to file the sheet.

ipi MATHEMATICS PRESCRIPTION SHEET #2

STUDENT NAME *Joseph Howard* STUDENT NUMBER

SCHOOL STAMP

GRADE *4* ROOM UNIT *D- Spec. Topics*

UNIT DATES	
UNIT BEGAN	*10-1*
UNIT ENDED	*10-11*
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
Prescription for Skill 1 is								*Mastery of*			
entered here.								*Skill 1 is*			
								tested here.			
Prescription for Skill 2 is								*Mastery of*			
entered here.								*Skill 2 is*			
								tested here.			
Prescription for Skill 3 is								*Mastery of*			
entered here.								*Skill 3 is*			
								tested here.			
Direction to take posttest											
is entered here.											
Additional prescription for								*Mastery of*			
Skill 3 based upon first post-								*Skill 3*			
test scores, is entered here.								*is tested*			
								here.			

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	*10*	*4*	*40*	*9*	*90*	*10*	*100*		
②	*5*	*4*	*80*	*5*	*100*	*5*	*100*		
③	*5*	*2*	*40*	*3*	*60*	*5*	*100*		
DATES									

P1 — 1968

Prescription Sheet #2: Joseph Howard
D-Special Topics

1. Obtain a copy of D-Spec. Topics Posttest.
   Examine the items Joseph did.

2. This posttest is administered after John has worked through prescriptions for each unmastered skill and has been given a separate mastery test for each.

3. The aide scores the Posttest and enters the scores and percentages on the Prescription Sheet. The Sheet is returned to the teacher.

4. This Posttest indicates to the teacher that John has mastered Skills 1 and 2 (90% and 100%), but that Skill 3 remains unmastered (60%).

5. The teacher analyzes John's errors in the Skill 3 section of the Posttest and prescribes additional work in Skill 3.

6. After John completes the additional prescription and is tested on Skill 3, the teacher posttests him again on the unit. The Unit Pretest is re-administered as the second Posttest, in this case, because of the timing of the tests. (Note the testing dates.)

7. John scores over 85% on all parts of the second Posttest. He is ready to move on to the next unmastered unit. In John's case, this is E-Num.

ipi MATHEMATICS PRESCRIPTION SHEET #3

STUDENT NAME John Rocco
STUDENT NUMBER
SCHOOL STAMP

GRADE 2 ROOM
UNIT B-Fractions
Mastery Pull

UNIT DATES	
UNIT BEGAN	10-3
UNIT ENDED	10-6
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
Prescription for Skill 1 is								Mastery			
entered here.								of Skill 1			
								is tested			
								here.			

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	6	3	50	6	100				
DATES									

P1 – 1968

← Prescription Sheet #3: John Rocco

B-Fractions

1. Obtain a copy of B-Fractions Posttest.
   Examine the test items John did.

2. After working on his prescription for Skill 1 (50% on Pretest), John took B-Fractions Posttest and scored 100% on the only skill in the unit.

3. John is assigned the next unmastered unit (B-Money) and he is given the B-Money Pretest.

ipi MATHEMATICS PRESCRIPTION SHEET #4

STUDENT NAME Philip Johnson STUDENT NUMBER ______

SCHOOL STAMP ______

GRADE 3 ROOM ______ UNIT D-Div.

UNIT DATES	
UNIT BEGAN	10-2
UNIT ENDED	10-23
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
Prescription for Skill 1								Mastery of			
is entered here.								Skill 1 is			
								tested here.			
Prescription for Skill 2								Mastery of			
is entered here.								Skill 2 is			
								Tested here.			
Prescription for Skill 4								Mastery of			
is entered here.								Skill 4 is			
								Tested here.			
Prescription for Skill 6								Mastery of			
is entered here.								Skill 6 is			
								Tested here			
Prescription for Skill 7								Mastery of			
is entered here.								Skill 7 is			
								tested here.			
Directions to take posttest											

is entered here.

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	4	80	5	100				
②	10	7	70	9	90				
3	5	5	100	5	100				
④	20	8	40	18	90				
5	6	6	100	6	100				
⑥	6	4	67	6	100				
⑦	4	1	25	4	100				
DATES									

P1 – 1968

← Prescription Sheet #4: Philip Johnson

D-Division

1. Obtain a copy of D-Div. Posttest.
   Examine the test items Philip did.

2. After Philip worked on his prescriptions for Skills and was tested for mastery of each separate skill, he was given the D-Div. Posttest. His scores of over 85% indicate mastery of the unit. He is ready to move on to the next unmastered unit. In Philip's case, this is D-COP.

3. Note the pagination box in the upper right hand corner of the Sheet. This section keeps a record of the number and order of the Prescription Sheets used for one Unit. A prescription for a single skill frequently requires more than two pages as represented in our samples. Therefore, additional Sheets are attached and numbered as space is needed. The pretest and posttest scores, however, are always recorded on the first sheet.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET #5

STUDENT NAME Kate Brown
STUDENT NUMBER
SCHOOL STAMP

Mastery Pull

GRADE 6 ROOM
UNIT G-COP

UNIT DATES	
UNIT BEGAN	10-19
UNIT ENDED	10-31
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
Prescription for Skill 1 is entered here.								Mastery of Skill 1 is tested here.			
Prescription for Skill 4 is entered here.								Mastery of Skill 4 is tested here.			
Prescription for Skill 5 is entered here.								Mastery of Skill 5 is tested here.			
Direction to take posttest entered here.											
Additional prescription for Skill 1, based upon posttest scores, is entered here.								Mastery of Skill 1 is tested here.			
Additional prescription for Skill 2, based upon first posttest scores, is entered here.								Mastery of Skill 2 is tested here.			

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	0	0	4	80	5	100		
2	5	5	100	4	80	5	100		
3	6	6	100	6	100	6	100		
④	5	3	60	5	100	5	100		
⑤	5	4	80	5	100	5	100		
DATES									

P1 – 1968

Prescription Sheet #5: Kate Brown

G-Combination of Processes 1, 4, 5

1. Obtain a copy of G-COP Posttest.
   Examine the test items Kate did.

2. Kate worked on her presecriptions for Skills 1, 4, and 5 was tested separately for mastery of each. She was assigned G-COP Posttests and her scores indicated that she still had not mastered Skill 1, and that she lost mastery of Skill 2.

3. The teacher then repeated the procedure of prescribing and testing Skills 1 and 2. Following this, Kate was posttested a second time (G-COP Pretest was used). This time her scores indicated mastery of G-COP.

4. Note the changes in mastery that occured from the Pretest scores to the first set of Posttest scores:

Skill	Pretest %	First Posttest %	Change
1	0	80	Improved but no mastery
2	100	80	Lost mastery
3	100	100	Maintained mastery
4	60	100	Mastery
5	80	100	Mastery

The teacher prescribed additional work for Skill 1 and determined mastery of Skill 1.
The teacher prescribed work for Skill 2 and determined mastery of Skill 2.
After this, the teacher had to decide whether or not to posttest the entire unit a second time.

(In order to make this decision concerning posttesting the entire unit or part of a unit for a second time, IPI teachers examine all the test scores on a unit. If the student has shown a continuous increase in mastery throughout his prescription and his first posttest scores show no regressions, then the teacher may elect to prescribe only the needed portions of the second posttest. If there are fluctuations in mastery of the skills within a unit, the teacher should test the entire unit during the second posttesting.)

In Kate's case, the entire unit is posttested the second time around. Kate's teacher wanted evidence that there were no persistent regressions or fluctuations in mastery of the skills.

5. Let's suppose that Kate's pretest and first posttest scores looked like this:

Skill	Pretest %	First Posttest %	Change
1	0	80	Improved but no mastery
2	100	100	Maintained mastery
3	100	100	Maintained mastery
4	60	100	Mastery
5	80	100	Mastery

The teacher also has noted through observation of Kate's performance in the prescriptions for Skills 1, 4 and 5, and test scores for the separate Skills, that Kate has shown steady growth in mastering these G-COP skills. The Posttest score of 80% for Skill 1 shows great improvement from the 0% Pretest score, but it remains unmastered. An additional prescription of work for Skill 1 is given to Kate who completes it accurately and quickly. For a second posttest, the teacher merely assigns the Skill 1 section of the test, and perhaps assigns the Skill 4 section (60% on Pretest) to double check retention.

Remember, a posttest is an instructional tool for obtaining achievement data about a student. Since posttesting on a unit is *repeated to gain additional information* for instructional decision-making, use it to answer your questions concerning diagnosis and mastery. Do not overburden the student with unnecessarily repeated posttesting os skills for which he has given clear evidence of mastery.

TEACHING IN IPI

PROCEDURES FOR POSTTESTING

Teacher	Student	Aide
1. Reviews student performance in prescriptions and on the separate skill tests used during instruction.		
a. Predicts high probability of success on Posttest.		
2. Prescribes and administers Unit Posttest.	Takes prescribed Unit Posttest.	
a. Reads directions as needed.	Gives completed Posttest to aide.	Scores Posttest.
3. Examines Posttest scores.		Enters scores and percentages in Scores box on Prescription Sheet.
a. Identifies the skill(s) still unmastered and any skill(s) for which mastery has regressed. These skills require additional prescriptions.	Waits for additional prescriptions. Works on additional prescriptions.	
b. Moves student to next unmastered unit when all the scores in the posttested unit are over 85%. Administers Pretest for this Unit.	Takes Unit Pretest for next Unit. Gives completed Pretest to aide.	Scores Pretest. Starts a new Prescription Sheet. Enters scores and percentages on Prescription Sheet.
4. Repeats steps 1-3 until all the scores of the posttested Unit are over 85%.		
a. Alternates use of Unit Posttest with Unit Pretest for second posttesting.	Repeats corresponding steps.	Repeats corresponding steps.

POSTTEST: Section II: IPI Pretests and IPI Posttests

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Select the best answer:

1. IPI Pretests sample: __________
   a. Representative skills in a unit.
   b. Each skill in a unit.
   c. Representative skills on a level.

22. IPI Pretests are: __________
   a. Parallel forms of the Placement Tests.
   b. Parallel forms of the Posttests.
   c. Parallel forms of CET's.

3. In sequencing units from a student's Placement Profile: __________
   a. Start sequencing the units found in the lowest level on the Profile.
   b. Start the wequence with the first Numeration unit that appears on the Profile.
   c. Automatically start the sequence at C-Numeration for third graders.

4. A student pretested in E-Division (7 skills) #1-78%; #2-100%; #3-60%; #4-90%; #5-100%; #6-40%; #7-80%. He needs prescriptions for: __________
   a. Skills 1 through 7.
   b. Skills 1, 3, 6, 7.
   c. Skills 1, 3, 4, 6, 7.

5. When a Pretest is administered at the beginning of a unit, the teacher: __________
   a. Administers the entire Unit Pretest.
   b. Administers only the items that test the skills that will be taught.
   c. Administers each skill section separately but in the order in which they appear in the booklet.

6. A teacher uses posttest scores to decide to: __________
   a. Move a student out of a unit.
   b. Extend a student's prescription.
   c. Both a and b.

7. Unit Posttests are used primarily to: __________
   a. Assess mastery of an entire unit.
   b. Assess mastery of each skill.
   c. Diagnose learning needs.

8. A teacher has extended a prescription for a student in C-Place Value (5 skills) #1-100%; #3-75%; #4-100%; #5-100%. The extended prescription will be for: __________
   a. Skill 1 and 3.
   b. Skill 3.
   c. None of these.

9. For the second posttesting of the student above (see item 8), the teacher will most probably assign: __________
   a. Skill 3 section of C-P.V. Posttest.
   b. Skill 3 section of C-P.V. Pretest.
   c. Skill 1 and 3 section of C-P.V. Posttest.

10. Posttests whose scores on individual skills are below 85% are used: __________
    a. To move a student back one level.
    b. To compute an average score for the unit.
    c. To diagnose the difficulty the student is having.

ANSWER KEY

POSTTEST: Section II: IPI Pretests and IPI Posttests (pp. 94-186)

1. b
2. b
3. a
4. b
5. a
6. c
7. a,b
8. b
9. b
10. c

IPI Curriculum Embedded Tests

IPI CURRICULUM EMBEDDED TESTS

The teacher:

1. Describes IPI Curriculum Embedded Tests in terms of use and organization.
2. Follows the procedures in using Curriculum Embedded Tests:
   a. Prescribing and administering a particular CET to student completing a prescription for a skill.
   b. Selecting and assigning only Part I of CET to assess mastery of a skill as needed.
   c. Scoring and filling in scores and percentages on Mathematics Prescription Sheet.
   d. Using the 85% criterion on CET-Part I to guide decision to assign the next unmastered skill or to extend the prescription.
   e. Using the 85% criterion on CET-Part II to guide selection and assignment of next prescription.
   f. Assigning Unit Posttest when CET-Part I scores for all prescribed skills indicate mastery of the skills.

PRETEST: Section III: Curriculum Embedded Test

The following items constitute a pretest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Directions:

1. Take the pretest.
2. Use the answer key immediately following the pretest to correct your work.
3. Work on the pages to which you are directed by the pretest answer key.
4. Take the posttest.
5. Use the answer key immediately following the posttest to correct your work.
6. Move on to the next pretest if you have scored 100%.
7. Work on the pages to which you are directed by the posttest answer key if you have scored under 100%. Discuss these pages with other teachers working through this section.
8. Using the pretest as a posttest. (Alternate using the two test forms.)
9. Work toward 100% mastery.

Select the best answer:

1. CET's are designed to test mastery of:
   a. A unit.
   b. One particular unit skill.
   c. Two particular unit skills. __________

2. When a student scores under 85% on Part 1 of a CET, he is:
   a. Assigned additional work in the skill.
   b. Retested with the section of the Unit Pretest that measures the skill in Part 1.
   c. Assigned Part 2 of the CET for the preceding skill. __________

3. When a student scores over 85% on Part 2 of a CET, the teacher must:
   a. Assign Part 1 of the next CET.
   b. Write a short prescription for the skill tested in Part 2.
   c. Check the scores of the Unit Pretest. __________

4. The following table represents a student's performance in D-Fractions to date: What is his next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
D-Fractions-1	100			
D-Fractions-2	60	Completed	95	95
D-Fractions-3	95			
D-Fractions-4	60			
D-Fractions-5	100			

   a. Part 1 of D-Fractions-4 CET.
   b. Part 2 of D-Fractions-3 CET.
   c. Work in D-Fractions-4. __________

5. A CET for a particular skill is similar to a Unit Posttest in-so-far as it:
   a. Tests for mastery of one skill and pretests the next skill.
   b. Tests for mastery of one or more skills.
   c. Tests for mastery and can be used for diagnosis. __________

6. What is the next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
E-Special Topics-1	70	Completed	95	100
E-Special Topics-2	80			
E-Special Topics-3	60			

   a. Assign E-Special Topics-2 CET Part 1.
   b. Assign E-Sepcial Topics-2 CET.
   c. Assign work in E-Special Topics-3. __________

7. What is the next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
E-Special Topics-1	70	Completed	95	50
E-Special Topics-2	80			
E-Special Topics-3	60			

   a. Assign E-Special Topics-2 CET (Part 1).
   b. Assign work in E-Special Topics-2.
   c. None of these. __________

8. What is the next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	Part 2
C-Sub.-1	60	Completed	95	60
C-Sub.-2	40	Completed	90	83
C-Sub.-3	60			
C-Sub.-4	100			

a. Assign C-Sub.-3 CET.

b. Assign work in C-Sub.-3.

c. None of these. __________

9. What helped the teacher decide not ot prescribe work for Skill 2?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	Part 2
C-Sub.-1	60	Completed	95	90
C-Sub.-2	60	None prescribed	100	70
C-Sub.-3	80	Completed	95	95
C-Sub.-4	100			

a. C-Sub.-1 CET (Part 2) and Pretest scores.

b. Work in C.-Sub.-1 and C-Sub.-1 CET.

c. C-Sub.-1 CET (Part 2) and C-Sub.-2 CET (Part 1). __________

10. What is the next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	Part 2
G-Add.-1	80	Completed	100	95
G-Add.-2	60	None assigned	95	90
G-Add.-3	100			

a. Take Unit Posttest.

b. Take Unit Pretest for next unmastered unit.

c. Take G-Add.-2 CET (Part 2). __________

ANSWER KEY

PRETEST: Section III: IPI Curriculum Embedded Tests (pp. 198-302)

1. b
2. a
3. c
4. a
5. c
6. b
7. b
8. b
9. c
10. a

CURRICULUM EMBEDDED TEST

The Curriculum Embedded Test (CET) is a highly specific test that measures mastery of one particular skill within a unit. It is used during instruction to monitor the student's progress as he moves from mastering one skill to another.

This section will answer the following questions about IPI Curriculum Embedded Tests (CET's):

1. What are CET's?
2. What are CET's used for?
3. How many CET's are there for the IPI Mathematics Continuum?
4. How are the CET's labeled?
5. What does each CET consist of?
6. Where are CET's found?
7. What are the procedures followed in prescribing CET's?

What are CET's

CET's are achievement tests, each of which measures mastery of a single skill within a unit separately. In addition, each CET has a section which serves as a limited pretest for the next skill in the unit.

What are CET's used for?

CET's are used to measure mastery of each and every unit skill by means of a separate test for each skill. For example, D-Special Topics contains Skills 1,2 and 3. There is a separate CET for Skill 1, for Skill 2, and for Skill 3. As the student completes the worksheets prescribed for the attainment of the assigned skill, the teacher then prescribes the CET for that skill. The student must score 85% or higher on this CET before he can move on to the next unmastered skill in the unit. CET's might be considered miniature posttests of individual skills, taken as part of the student's prescription for the skill. Determination of mastery of each skill is important. A CET score under 85% tells the teacher that the skill is still unmastered and additional work must be prescribed. A CET score of 85% tells the teacher that the skill has been mastered and the student is ready to move on to the next unmastered skill in the unit or to the Unit Posttest (if this is the last skill he must master).

While CET's are used to assess mastery, they may also be used to diagnose a student's learning problem in the event the student fails the CET. In this manner, CET's help the teacher to diagnose the student as a learner and to prescribe more effective assignments.

How many CET's are there for the Mathematics Continuum?

There are two parallel forms of CET's for each skill in the Mathematics Continuum except for Level A which has one CET for each of the skills in the three Areas (Num., Add., Frac.)

How are CET's labeled?

CET's are labeled by the unit skill they test.

EXAMPLE: D-Place Value-4, B-Num.-1, G-COP-4.

In addition, each CET is labeled as CET I or CET II to indicate whether it is the first parallel form of the CET or the second.

What does each CET consist of?

Each CET consists of a set of test items that sample the unit skill under consideration. The CET measures the skill just learned through the prescription.

In addition, there is a second section to the CET which serves as a short pretest of the next skill appearing in the unit. The information from this section supplements the unit pretest information.

Where are CET's found?

CET's are found in two places.

CET I and II for a skill are found in the booklet of worksheets for the particular skill. For example, CET I and II for D-Place Value-4 are found in the booklet of worksheets called Standard Teaching Sequence Booklet D-Place Value-4. This is so designed to facilitate administration of the test at specified intervals in the sequence of prescribed worksheets.

There are also pads of the identical CET I's bound together. The CET I may be pulled off and single sheet presented to the student. This arrangement allows for a great deal of flexibility in using CET's. The teacher may wish to prescribe only the CET for a skill in order to obtain additional test information for instructional decision-making.

The different ways that a teacher uses CET's as a basis for instructional decisions will be discussed in detail in the next section. In the meantime, the following exercise will help you become familiar with the contents and organization of CET's.

EXAMINE THE FIVE STS BOOKLETS FOR D-COP (FIVE UNIT SKILLS) THAT FOLLOW TO CHECK THAT:

1. The cover identifies the Unit Skill taught in the STS Booklet.
2. The back of the booklet identifies the Unit Skill, states the skill objective, as well as indexes the worksheets, CET's and supplementary materials by page. Some exercises have two worksheets, and each page is indexed in the left-hand column or under Supplementary Materials.
3. CET I is indexed in the left-hand column. CET II is indexed under Supplementary Material.

4. The inside front cover provides the student with a sample of completed test item. The remaining pages contain worksheets, CET's and Supplementary Materials.
5. As you examine the pages, compare the directions given to the student to the description of the corresponding exercise indexed on the back cover. Both are behaviorally stated.
6. Both CET's contain a section that tests the skill taught in the booklet. The test items are similar to the worksheet items since they both focus on the same behavior or skill. Both CET's contain a section (below the double line) that is a limited pretest of the next skill in the unit, there will be no test below the double line.
7. As you examine each successive STS Booklet for the Unit you have selected, you will notice that the CET tests the skill in it's booklet and also pretests the next skill taught in the following STS Booklet. The CET's in the last STS booklet have no double line and pretest section.

THEN EXAMINE THE CORRESPONDING CET'S FROM THE PADS. THESE HAVE BEEN INSERTED AFTER THE STS BOOKLETS. NOTE THE FOLLOWING:

1. Only CET I's are included since only CET I's are in pad form.
2. The CET I for a particular skill is identical to the CET I in the STS Booklet.

SAMPLE BOOKLETS WITH CET's

→

ipi
MATHEMATICS

Name ____________________ Date ____________________

Class ____________________ Number ____________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff

LEARNING RESEARCH AND DEVELOPMENT CENTER

University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

the staff of Appleton-Century-Crofts

under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, COMBINATION OF PROCESSES (07), SKILL 1

Appleton-Century-Crofts
NEW YORK | DIVISION OF MEREDITH CORPORATION

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TO THE STUDENT

Try to solve these problems.

$$\begin{array}{r} 10 \text{ cups} \\ \underline{+\ 15 \text{ cups}} \end{array} \qquad \begin{array}{r} 25¢ \\ \underline{-\ 10¢} \end{array}$$

5 cups − 3 cups = ____ cups

10 cups + 2 cups = ____ cups = ____ pints

In this booklet you will practice adding and subtracting yards, inches, and units of measurement.

Answers

25 cups
15¢
2 cups
12 cups = 6 pints

Write the answers to these problems.

$$\begin{array}{r} 15 \\ +\ 23 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 295 \\ -\ 103 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 1{,}386 \\ +\ 112 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 96 \\ -\ 16 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 46 \\ -\ 12 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 187 \\ +\ 212 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 275 \\ +\ 414 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 867 \\ +\ 432 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 1{,}986 \\ -\quad 384 \\ \hline \\ \hline \end{array}$$

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	1	1

Write the answers to these problems.

$$\begin{array}{r} 175 \\ +\ 23 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 630 \\ +\ 414 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 373 \\ +\ 104 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 166 \\ +\ 23 \\ \hline \\ \underline{\qquad} \end{array}$$

$$\begin{array}{r} 462 \\ -\ 241 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 1{,}265 \\ +\ 124 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 487 \\ -\ 336 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 129 \\ -\ 106 \\ \hline \\ \underline{\qquad} \end{array}$$

$$\begin{array}{r} 156 \\ +\ 22 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 1{,}975 \\ -\ 132 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 314 \\ -\ 104 \\ \hline \\ \underline{\qquad} \end{array} \qquad \begin{array}{r} 1{,}360 \\ +\ 630 \\ \hline \\ \underline{\qquad} \end{array}$$

For extra practice, do Pages 8 and 9.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	07	1	2

Write the answers to these problems. Use the work space.

Work space

36 − 12 = ____

100 + 92 = ____

1427 + 562 = _____

342	412	347	416
+ 104	− 201	− 126	+ 22
___	___	___	___

1746	1300	1186	1376
+ 213	+ 291	− 143	− 205
____	____	____	____

For extra practice, do Pages 10 and 11.

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	1	3

Do what each sign tells you.

10¢
+ 8¢
____

38 feet
+ 61 feet
____

921 days
+ 118 days
____

19 cents − 7 cents = ____ cents

554 miles
+ 244 miles
____

157 hours
− 25 hours
____

1238 inches
− 1127 inches
____

149 weeks − 116 weeks = ____ weeks

36 inches − 16 inches = ____ inches

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	1	4

Add or subtract.

20¢
+ 9¢
____

52 feet
+ 25 feet
____

1129 days
− 310 days
____

27 cents − 12 cents = ____ cents

734 miles
+ 164 miles
____

287 hours
− 53 hours
____

1945 inches
− 1324 inches
____

52 weeks − 11 weeks = ____ weeks

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	07	1	5

Fill in the blank with the correct answer.

4 cups

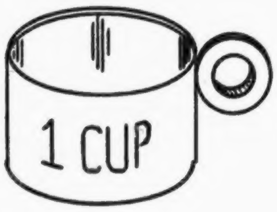
+ 4 cups

_____ = 4 pints = 2 quarts

1 pint = 2 cups

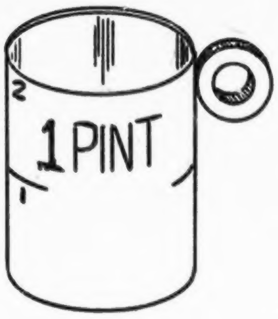
2 pints = ____ cups

____ cups = 1 quart



____ pints = 1 quart

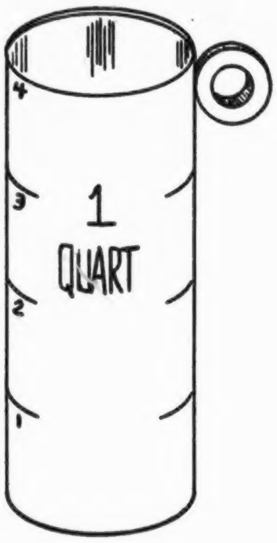
4 pints = ____ quarts



8 cups = ____ quarts

8 cups = ____ pints

2 cups = ____ pint



For extra practice, do Page 12.

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	1	6

CET I

Add or subtract.

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

9	14	19	54
+ 2	+ 35	− 9	− 12
___	___	___	___

25¢ − 10¢ = ___¢

3 feet + 6 feet = ___ feet

5 cups + 1 cup = ___ cups

10 pints − 4 pints = ___ pints

12 inches	14	15 minutes	9 quarts
+ 11 inches	− 8	− 7 minutes	+ 3 quarts

Add or subtract.

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

927	23	12	56
− 148	− 15	+ 18	+ 76
___	___	___	___

18 inches + 4 inches = ___ inches

48 cents − 29 cents = ___ cents

Write the sums.

$\begin{array}{r} 25 \\ +\ 14 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 33 \\ +\ 26 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 47 \\ +\ 22 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 191 \\ +\ 100 \\ \hline \\ \hline \end{array}$
$\begin{array}{r} 111 \\ +\ 200 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 225 \\ +\ 102 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 217 \\ +\ 180 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 442 \\ +\ 16 \\ \hline \\ \hline \end{array}$
$\begin{array}{r} 308 \\ +\ 190 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 485 \\ +\ 113 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 806 \\ +\ 122 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 1133 \\ +\ 124 \\ \hline \\ \hline \end{array}$
$\begin{array}{r} 1447 \\ +\ 322 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 111 \\ +\ 1374 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 1584 \\ +\ 311 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} 1548 \\ +\ 341 \\ \hline \\ \hline \end{array}$

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
D	07	1	8

Write the differences.

$$\begin{array}{r} 45 \\ -\ 15 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 188 \\ -\ 105 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 196 \\ -\ 80 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 164 \\ -\ 23 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 175 \\ -\ 15 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 165 \\ -\ 4 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 346 \\ -\ 122 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 465 \\ -\ 203 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 460 \\ -\ 140 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 869 \\ -\ 158 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 1114 \\ -\ 100 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 1369 \\ -\ 65 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 1784 \\ -\ 142 \\ \hline \\ \hline \end{array} \qquad \begin{array}{r} 1998 \\ -\ 18 \\ \hline \\ \hline \end{array}$$

TOTAL POINTS	NUMBER CORRECT
14	

LEVEL	UNIT	SKILL	PAGE
D	07	1	9

Write the answers to these problems in the blanks.

25 + 4 = ____

57 + 22 = ____

47 + 22 = ____

76 + 11 = ____

40 + 93 = ____

350 + 42 = ____

822 + 175 = ____

1,265 + 323 = ____

1,991 + 5 = ____

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	1	10

Write the answers to these problems in the blanks.

47 – 13 = ____

62 – 21 = ____

106 – 3 = ____

242 – 120 = ____

579 – 201 = ____

867 – 163 = ____

1,549 – 148 = _____

1,760 – 100 = _____

1,989 – 208 = _____

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	1	11

Fill in each blank with the correct answer.

2 cups = 1 pint

4 cups = ____ quart

4 cups = ____ pints

1 quart = ____ pints

4 pints = ____ quarts

8 cups = ____ pints

8 cups = ____ pints

1 pint = ____ cups

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	07	1	12

CET II

Add or subtract.

34	97	25	62
+ 25	− 16	+ 71	− 40
____	____	____	____

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

6 nickels + 2 nickels = ____ nickels

4 cups − 2 cups = ____ cups

5 minutes + 20 minutes = ____ minutes

4 yards + 8 yards = ____ yards

32 feet	3 cups	37 pennies	24
− 12 feet	+ 1 cup	− 10 pennies	− 17
________	________	____________	____

Add or subtract.

427	265	942	671
− 391	+ 826	+ 395	− 186
____	____	____	____

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

206 pennies + 327 pennies = ____ pennies

60 minutes − 37 minutes = ____ minutes

LEVEL D, COMBINATION OF PROCESSES, SKILL 1

OBJECTIVE: Solves addition and subtraction problems written in horizontal or vertical form with no carrying or borrowing. Reviews money, time, and measurement skills from level C. No conversions except number of cups and pints in one quart.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Writes answers to vertical addition and subtraction problems. Answers to 1,600.	
2.	Writes answers to vertical addition and subtraction problems. Answers to 2,000.	8 and 9
3.	Writes answers to horizontal and vertical addition and subtraction problems. Answers to 2,000.	10 and 11
4.	Adds and subtracts numerals to 2,000 in the form of days, years, cents, ¢, inches, feet, months.	
5.	Adds and subtracts numerals to 2,000 in the form of days, years, cents, ¢, inches, feet, months.	
6.	Fills in blanks with answers to conversion problems of cups, pints and quarts.	12
7.	CET I.	
	CET II.	13

Circle pages that are to be done.

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MATHEMATICS

Name ______________________ Date ______________

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REVISED DEVELOPMENTAL EDITION

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INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, COMBINATION OF PROCESSES (07), SKILL 2

Appleton-Century-Crofts
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TO THE STUDENT

Write the sum in the blank.

$$\begin{array}{r} 396 \text{ inches} \\ +\ 548 \text{ inches} \\ \hline \underline{\quad\quad} \text{ inches} \end{array}$$

You will be doing this type of problem in this booklet.

Answer

944 inches

Find the sums and differences.

127 + 246 = 373

746
+ 250
____

312
− 191
____

816 − 209 = ____

596 + 107 = ____

246
− 109
____

114
+ 237
____

315 + 326 = ____

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	07	2	1

Find the sums and differences.

$$\begin{array}{r} 810 \\ -\ 280 \\ \hline 530 \end{array}$$

467 + 928 = ____

311 − 206 = ____

$$\begin{array}{r} 425 \\ -\ 334 \\ \hline \end{array}$$

$$\begin{array}{r} 847 \\ +\ 192 \\ \hline \end{array}$$

724 − 416 = ____

500 + 500 = ____

$$\begin{array}{r} 906 \\ +\ 438 \\ \hline \end{array}$$

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	07	2	2

Find the sums and differences. Label your answers.

25¢ − 18¢ = 7¢

306 feet
+ 274 feet

____ ____

824 days
+ 642 days

____ ____

120 days + 216 days = ____ ____

315 years
− 247 years

____ ____

927 inches
+ 346 inches

____ ____

14¢ + 69¢ = ________

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	07	2	3

Find the sums and differences. Label your answers .

323 yards + 248 yards = ____ ____

425 weeks
− 206 weeks
219 weeks

623 days
+ 994 days
____ ____

342 months + 719 months = ____ ____

918 yards
− 326 yards
____ ____

448 inches
+ 519 inches
____ ____

18¢ + 53¢ = ____

For extra practice, do Page 9.

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	07	2	4

Find the sums and differences. Label your answers.

825 days − 538 days = 287 days

418 pints
+ 729 pints

____ ____

692 miles
+ 877 miles

____ ____

466 months − 118 months = ____ ____

777 quarts
+ 923 quarts

____ ____

982 cups
− 457 cups

____ ____

For extra practice, do Page 10.

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	07	2	5

There are 2 cups in 1 pint. To find how many pints there are in a group of cups, divide the number of cups by 2.

2 ÷ 2 = 1

2 cups = 1 pint

10 ÷ 2 = 5

10 cups = 5 pints

268 ÷ 2 = 134

268 cups = ____ pints

There are 2 pints in a quart. To find how many quarts there are in a group of pints, divide the number of pints by 2.

336 ÷ 2 = 168

336 pints = ____ quarts

504 ÷ 2 = ____

504 pints = ____ quarts

For extra practice, do Page 11.

TOTAL POINTS	NUMBER CORRECT
5	

LEVEL	UNIT	SKILL	PAGE
D	07	2	6

Solve these problems.

  308 cups
+ 416 cups

724 cups or ____ pints

  289 pints
+ 773 pints

_____ pints or ____ quarts

  986 cups
− 348 cups

____ cups or ____ pints

For extra practice, do Page 12.

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	07	2	7

CET I

TL. PTS.	
9	100%
NO. OF PTS.	%
8	89
7	78
6	67
5	56
4	44
3	33
2	22
1	11

Add or subtract as requested.

36 hours
+ 87 hours
____ hours

78 inches
− 49 inches
____ inches

247 days
+ 174 days
____ days

25¢ − 16¢ = ____¢

61 days + 79 days = ____ days

52 weeks − 17 weeks = ____ weeks

88 feet
− 39 feet
____ feet

276 yards
+ 97 yards
____ yards

312 days
− 116 days
____ days

Multiply or divide as requested.

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

5 inches × 4 = ____ inches

30 feet ÷ 5 = ____ feet

4 yards × 4 = ____ yards

42 feet ÷ 7 = ____ feet

Find the sums and differences. Label your answers with the correct unit of measurement.

519 miles
− 487 miles
____ miles

845 days
+ 567 days
_____ days

1000 feet + 1,000 feet = 2,000 feet

982 weeks − 416 weeks = ____ _____

605 quarts
− 336 quarts
____ _____

986 yards
+ 747 yards
_____ _____

472 inches + 819 inches = _____ ______

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	07	2	9

Find the answers to these problems.

300 inches
− 28 inches
272 inches

43 months
+ 359 months
____ months

37 cups + 89 cups = ____ cups or ____ pints

391 cents
− 112 cents
____ cents

215 minutes − 93 minutes = ____ minutes

922 inches − 180 inches = ____ inches

514 months
+ 1,348 months
_____ months

514 cups + 628 cups = ____ cups or ____ pints

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	2	10

Find the sums and differences.

1 pint = 2 cups

1 quart = 2 pints

3 pints + 5 pints = 8 pints or 4 quarts

1 cup + 3 cups = ____ cups or ____ pints

229 quarts − 78 quarts = ____ quarts

8 pints + 20 pints = ____ pints or ____ quarts

121 cups − 39 cups = ____ cups or ____ pints

242 pints + 688 pints = ____ pints or ____ quarts

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	2	11

Find the sums and differences.

376 pints
+ 722 pints

_____ pints or 549 quarts

892 cups
− 316 cups

____ cups or ____ pints

529 pints
+ 463 pints

____ pints or ____ quarts

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	07	2	12

CET II

TL. PTS.	
9	100%
NO. OF PTS.	%
8	89
7	78
6	67
5	56
4	44
3	33
2	22
1	11

Add or subtract as requested.

17 inches
+ 23 inches
____ inches

13 pints
+ 19 pints
____ pints

36 quarts
− 29 quarts
____ quarts

15¢
+ 17¢
____¢

34¢ − 17¢ = ____¢

71¢ − 65¢ = ____¢

532 yards
− 174 yards
____ yards

476 cups
+ 285 cups
____ cups

78 feet − 29 feet = ____ feet

Multiply or divide as requested.

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

5 × 3 = ____

16 inches ÷ 2 = ____ inches

45 yards ÷ 5 = ____ yards

4 × 8 feet = ____ feet

LEVEL	UNIT	SKILL	PAGE
D	07	2	13

LEVEL D, COMBINATION OF PROCESSES, SKILL 2

OBJECTIVE: Solves addition and subtraction problems written in horizontal or vertical form with borrowing and carrying numbers to 2,000. Reviews money, time, and measurement skills for Level C. No conversions except number of cups and pints in one quart.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Adds and subtracts.	
2.	Adds and subtracts.	
3.	Adds and subtracts units of measurement.	
4.	Adds and subtracts units of measurement.	9
5.	Adds and subtracts units of measurement.	10
6.	Adds and subtracts, with conversion of cups, pints, and quarts.	11
7.	Adds and subtracts, with conversion of cups, pints, and quarts.	12
8.	CET I.	
	CET II.	13

Circle pages that are to be done.

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INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, COMBINATION OF PROCESSES (07), SKILL 3

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TO THE STUDENT

Write in your answers to these problems.

28 days = ____ weeks

6 feet
× 3
____ feet

¢
3) 9¢

In this booklet you will practice solving problems like these.

Answers

4	18	3

Solve these problems.

$7 \times 3 =$ ____

$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$

$1\overline{)\,6}$

$9 \div 3 =$ ____

$4 \times 10 =$ ____

$\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$

$3\overline{)\,21}$

$9 \times 5 =$ ____

$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$

$2\overline{)\,16}$

$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$

$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$

For extra practice, do page 8 and 9.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	07	3	1

Solve. Label your answer.

1 quart = 2 pints

3 quarts = ____ pints

6 quarts = ____ ______

6 pints = ____ ______

1 week = 7 days

2 weeks = ____ ______

4 weeks = ____ ______

21 days = ____ ______

1 nickel = ____¢

3 nickels = ____ ___

25¢ = ____ ______

6 nickels = ____ ___

35¢ = ____ ______

TOTAL POINTS	NUMBER CORRECT
13	

LEVEL	UNIT	SKILL	PAGE
D	07	3	2

Solve. Label your answers.

1 dime = 10 ¢

3 dimes = ____ ___

5 dimes = ____ ___

___ ____ = 40¢

____¢ = 2 quarters

25¢ = ___ quarter

8 × 2 = ____

16 ÷ 4 = ____

$7\overline{)35}$

$$\begin{array}{r} 4 \\ \times 8 \\ \hline \end{array}$$

$9\overline{)36}$

$4\overline{)24\text{ feet}}$

$$\begin{array}{r} 4\text{ minutes} \\ \times 5 \\ \hline \end{array}$$

____ _______

18¢ ÷ 3 = ___ ___

For extra practice, do page 10.

TOTAL POINTS	NUMBER CORRECT
14	

LEVEL	UNIT	SKILL	PAGE
D	07	3	3

Solve these problems. Label your answers.

3 yards × 3 = 9 yards

3 inches × 5 = ____ ________

11 feet × 9 = ____ ________

4 inches × 20 = ____ ________

35 yards × 2 = ____ ________

TOTAL POINTS	NUMBER CORRECT
5	

LEVEL	UNIT	SKILL	PAGE
D	07	3	4

Solve. Label your answers.

$4\overline{)\,36\text{ pints}}$

$$\begin{array}{r} 2\text{ pints} \\ \underline{\times 4} \end{array}$$

____ _____

$$\begin{array}{r} 2\text{ feet} \\ \underline{\times 3} \end{array}$$

____ ____

$6\overline{)\,30¢}$

$4\overline{)\,24\text{ inches}}$

$3\overline{)\,21\text{ hours}}$

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	07	3	5

Solve. Label your answers.

$5\overline{)50\text{ minutes}}$

$$\begin{array}{r}2\text{ inches}\\ \underline{\times 6}\end{array}$$

____ ____

$2\overline{)8\text{ days}}$

$4\overline{)20\text{ years}}$

$$\begin{array}{r}1\text{ inch}\\ \underline{\times 5}\end{array}$$

____ ____

$$\begin{array}{r}6\text{ weeks}\\ \underline{\times 4}\end{array}$$

____ ____

$2\overline{)2\text{ weeks}}$

$$\begin{array}{r}6\\ \underline{\times 3\text{ feet}}\end{array}$$

____ ____

$$\begin{array}{r}9\text{ feet}\\ \underline{\times 2}\end{array}$$

____ ____

$$\begin{array}{r}2\\ \underline{\times 7\text{ yards}}\end{array}$$

____ ____

For extra practice, do page 11.

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	3	6

CET I

Multiply or divide.

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

5 feet
× 5
____ ____

4 inches
× 2
____ ____

3 days
× 4
____ ____

[illegible] hours ÷ 4 = ____ hours

12 days ÷ 3 = ____ days

27 yards ÷ 3 = ____ yards

24¢ ÷ 4 = ____¢

18 weeks ÷ 3 = ____ weeks

9 ÷ 9 = ____

7 × 3 = ____

Solve.

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Tommy spends 5 hours in school each day. How many hours does he spend there in five days?

______hours

Lucy has 62¢ and her sister has 21¢. They put their money together and bought some doll house furniture for 75¢. How much did they have left?

_____¢

Find the products.

6 × 2 = ____

$\begin{array}{r} 7 \\ \times 3 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 9 \\ \times 2 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 1 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 7 \\ \times 2 \\ \hline \\ \hline \end{array}$

$\begin{array}{r} 5 \\ \times 7 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 10 \\ \times 4 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 9 \\ \times 5 \\ \hline \\ \hline \end{array}$

$\begin{array}{r} 6 \\ \times 4 \\ \hline \\ \hline \end{array}$ $\begin{array}{r} 5 \\ \times 8 \\ \hline \\ \hline \end{array}$

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	3	8

Find the quotients.

28 ÷ 4 = ____

27 ÷ 3 = ____

36 ÷ 4 = ____

$6\overline{)\,30}$

$6\overline{)\,18}$

$6\overline{)\,24}$

$9\overline{)\,36}$

$9\overline{)\,45}$

$2\overline{)\,14}$

$3\overline{)\,21}$

$10\overline{)\,30}$

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	3	9

Solve. Label your answers.

$3\,\overline{)\,36\text{ minutes}}$

$10\,\overline{)\,50¢}$

$$\begin{array}{l} \ \ 3\text{ hours} \\ \underline{\times 2} \end{array}$$

____ ______

$$\begin{array}{l} \ \ 3¢ \\ \underline{\times 5} \end{array}$$

____ __

$5\,\overline{)\,45\text{ hours}}$

$2\,\overline{)\,14\text{ inches}}$

$$\begin{array}{l} \ \ 9¢ \\ \underline{\times 3} \end{array}$$

____ __

$$\begin{array}{l} \ \ 4\text{ inches} \\ \underline{\times 7} \end{array}$$

____ ______

12 feet ÷ 4 = ____ ________

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	3	10

Solve. Label your answers.

$\begin{array}{r} 5 \text{ days} \\ \underline{\times 7} \end{array}$

__ ______ or ___ weeks

$7\,\overline{)\,21 \text{ yards}}$

8 pints = ____ quarts

$\begin{array}{r} 1 \text{ yard} \\ \underline{\times 3} \end{array}$

____ ______

$\begin{array}{r} 9 \\ \underline{\times 3} \end{array}$

24 inches ÷ 8 = ____ ______

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	07	3	11

CET II

Multiply or divide.

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

24 feet ÷ 4 = ____ feet

14 ÷ 7 = ____

50 ÷ 5 = ____

8 yards × 1 = ____ yards

4 quarts ÷ 2 = ____ quarts

3 cups × 4 = ____ cups

5 yards ÷ 1 = ____ yards

4 inches × 7 = ____ inches

$4\overline{)32}$

$3\overline{)15}$

Solve these problems.

Henry spends 3 hours delivering papers each day. How many hours does he spend delivering papers in six days?

____hours

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Kelly had 27¢ and his sister, Kim, had 13¢. They put their money together and bought a kite which cost 25¢. How much did they have left?

____¢

LEVEL D, COMBINATION OF PROCESSES, SKILL 3

OBJECTIVE: Solves multiplication and division problems through 5 × 10 involving all previously learned skills.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Completes multiplication and division facts, involving no units of time, money, or measurement.	8, 9
2.	Converts quarts to pints, weeks to days, cents to nickels, and reverse.	
3.	Converts cents to dimes and reverse. Completes multiplication and division facts, some requiring labelled answers.	10
4.	Solves problems and labels answers in yards, and inches.	
5.	Solves problems and labels answers in hours, cents, inches, pints, feet.	
6.	Solves problems and labels answers in minutes, days, weeks, years, inches, feet, yards.	11
7.	CET I.	
	CET II.	12

Circle pages that are to be done.

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MATHEMATICS

Name ____________________ Date ____________________

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INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, COMBINATION OF PROCESSES (07), SKILL 4

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TO THE STUDENT

Can you solve this problem?

> Paula has 16 cookies and Robin has 20. If they put their cookies together and then give 1/2 of them away, how many will they be giving away? ______________

This booklet will show you how to do problems like this.

Answer

18 cookies

Solve these problems. Label your answers.

Merle bought 7 packs of baseball cards. Each pack has 5 cards. How many baseball cards did Merle buy? ________ cards

A butcher bought 10 sides of beef. He sold 1/2 of them on Monday. How many did he sell? ____________________________

Monica wants to buy a soda for 30¢. She gives the soda jerk two quarters. How much change will she get back? ____________

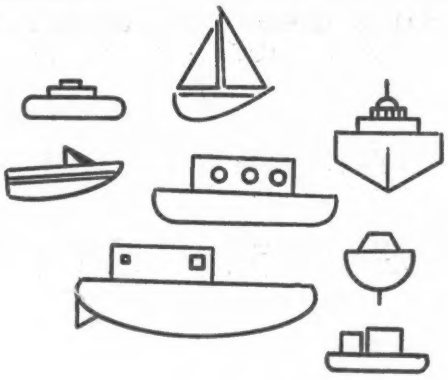
Freda caught a fish 6 inches long. Ronald caught one that was twice as long. How long was Ronald's fish? ____________________________

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	1

Solve these problems. Label your answers.

Henrich had 8 boats. He gave away 1/4 of them. Draw a ring around 1/4 of the boats to show how many he gave away.



It takes you 1 hour to get to the beach on the bus. You stay there for 3 hours. You return home on the bus and it takes you another hour. How long will you be away from home? ____________________

Batman found 18 stolen diamonds. Robin found 32. Then the thieves trapped them and stole back 1/2 of the diamonds. How many diamonds did Batman and Robin have left? ____________________

Bus fare is 20¢. If children under 7 can ride for 1/2 fare, what would be the total cost for 3 children, ages 4, 5 and 6 to ride the bus? ______

For extra practice, do Page 8.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	2

Solve these problems. Label your answers.

Shirley gets 5¢ every week from her aunt and 5¢ every week from her uncle. How much will she get in 4 weeks? ________

Marge bought 3 boxes of canned cat food. Each box contained 8 cans of food. How many cans did she buy? ________

Christopher had a piece of licorice 21 inches long. He ate 7 inches of it. How much was left? ________

This year at the zoo the giraffes had a baby, the hippopotamus had 2 babies, and the wild cats had two litters of 5. How many animals were born at the zoo this year? ________________

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	3

Solve these problems. Label your answers.

It is 40 minutes until dinner time. Juan must clean his room before dinner. If it takes Juan 25 minutes to clean his room, how much time does he have to play outside before dinner? ____________________

On his way home from school Pedro spent 15 minutes walking, 5 minutes climbing a tree, and 10 minutes talking to a friend. How long did it take him to get home from school? ________________________

Norma sleeps 6 hours every night. How much time does she spend sleeping in 5 nights? ______________

At the end of the Summer Festival, a merchant had 40 oranges left. He divided them evenly among his 5 workers. How many oranges did each worker get? _________________

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	4

Solve these problems. Label your answers.

Alex has a train. The engine is 5 inches long, one car is 4 inches long, two cars are 6 inches long each and the caboose is 5 inches long. How long is the whole train? ______________________________

Cindy has four 3-inch books. Cindy herself is 60 inches tall. If she stacks the books and stands on top of them, how tall will she be? ____________

The price of a candy bar has doubled since 1945. If it cost 4¢ then, how much does it cost now? ________

Craig has 23 marbles in one box, 43 in another, 78 in another. How many marbles does he have altogether? ____________________

For extra practice, do Page 9.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	5

Solve these problems. Label your answers.

A plant has 7 pick-up trucks, 3 dump trucks, and 8 cold storage trucks. 1/3 of the trucks are out of order. How many trucks are out of order?

____

A publishing company divides 48 pencils among its 4 writers. If each writer gets the same number of pencils, how many pencils does each one get? ____________________

A warehouse has 436 boxes on the third floor. If 246 boxes are destroyed in a fire, how many boxes are left? ____________________

34 cars are parked in Lot A and 45 are parked in Lot B. If by noon 21 cars have gone, how many are left altogether? ____________________

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	6

CET I

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

Solve these problems.

Joe spent 7 cents for bubble gum, a nickel for a candy bar and a dime for popcorn. How much money did he spend?

____

Mary's allowance is 30 cents a week. She spends 5 cents on candy, 5 cents for gum and she puts 10¢ in the bank. How much does she have left?

____

Jill is 42 inches tall. Her big brother Jack is 65 inches tall. How much taller is Jack than Jill?

____

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Write the correct sign, > or <, in each circle.

9 ÷ 3 ○ 10 ÷ 5

16 feet + 9 feet ○ 26 feet

Solve these problems. Label your answers.

Nathan had 34 nails and Barbara had 22. They put them together in a bag and went to the factory. When they got there they discovered that 1/2 of the nails had fallen out. How many were left? ______

$$\begin{array}{r} 34 \\ +\ 22 \\ \hline \end{array} \qquad 56 \times \frac{1}{2} =$$

A store sells 18¢ toys today for 1/2 price. If they sell 6 of these toys, how much money will they make? ______

$$18 \times \frac{1}{2} = \qquad 6 \times 9¢ =$$

Pierre works at the shop for 3¢ a day. At nights he sells papers for 6¢ a night. How much money does he make after 4 days and nights? ______

$$\begin{array}{r} 3 \\ +\ 6 \\ \hline \end{array} \qquad 9¢ \times 4 =$$

Mickie has 24 gum drops which she divides evenly among her 6 friends. How many does each friend get? ______

$$6\overline{)24}$$

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	8

7

Solve these problems. Label your answers.

Carlos needs 25¢ more to buy a kite that costs 89¢ and twine that costs 10¢. How much money does he have right now to buy these items?

____

Henrietta and her friend Susan decided to do volunteer work at the hospital after school. One week Henrietta worked 1 hour on Monday, 2 hours on Wednesday and 1 hour on Friday. That week Susan only worked 1/2 the time Henrietta worked. How many hours did Susan work?

$1 + 2 + 1 = 4 \div 2 =$ ____________________

Robert has 2 yards of wire to build a pen for his pet rabbit. If he needs a total of 9 feet of wire to complete the pen how many more feet of wire must he buy? ____________________

Sonya went to the store and bought 2 gallons of milk and 2 quarts of orange juice. How many quarts of milk and orange juice did she buy altogether? ____________________

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	07	4	9

CET II

Solve these problems.

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

Susan has 6 apples. If she saves 1 for herself and 1 for her teacher, how many will she have left to give to her friends? ______________

A school bus has seats for 36 children. If a bus makes 3 stops and picks up 5 children at each stop, how many seats are left? ______________

One day, Jim caught seven fish and John caught five. It takes six fish to make one meal for their family. How many meals can their mother make from the fish they caught? ______________

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Write the correct sign > or < in each circle.

14 inches − 2 inches ○ 6 inches + 9 inches

12 ÷ 3 ○ 7 − 6

LEVEL D, COMBINATION OF PROCESSES, SKILL 4

OBJECTIVE: Solves one- and two-step word problems involving skills from money, time, measurement, and other units learned to this point. Skills involved are up to D—Combination of Processes. Number limits determined by previous objectives.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Solves one-step word problems.	
2.	Solves one- and two-step word problems.	8
3.	Solves one- and two-step word problems.	
4.	Solves one- and two-step word problems.	
5.	Solves one- and two-step word problems.	9
6.	Solves one- and two-step word problems.	
7.	CET I.	
	CET II.	10

Circle pages that are to be done.

ipi
MATHEMATICS

Name ______________________ Date ______________________

Class ______________________ Number ______________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff
LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, COMBINATION OF PROCESSES (07), SKILL 5

Appleton-Century-Crofts
NEW YORK | DIVISION OF MEREDITH CORPORATION

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TO THE STUDENT

Can you do this?

Write =, >, or < in the circle.

3×5 ○ $2\overline{)20}$

You will be doing this type of problem in this booklet.

Answer

⧁

Circle the greater number in each box.

500 [✓ 600]

155 5

806 1,000

620 600

265 270

550 450

9 13

720 740

875 880

998 909

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	5	1

Circle the number that is less.

[✓ 89] 99

300 400

591 587

77 177

900 1,025

800 900

300 306

529 429

750 760

780 880

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	5	2

Write the word "greater" or "less" in the blanks.

Put the correct sign > or < in each circle.

Remember:

> means greater than.

< means less than.

89 is greater than 76.

89 ○> 76

360 is __________ than 390.

360 ○ 390

1,005 is __________ than 989.

1,005 ○ 989

775 is __________ than 725.

775 ○ 725

856 is __________ than 852.

856 ○ 852.

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	07	5	3

Write the word "greater" or "less" in the blanks.

Put the correct sign > or < in each circle.

471 is ______________ than 478.

471 (<) 478

601 is ______________ than 599.

601 ○ 599

104 is ______________ than 103.

104 ○ 103

989 is ______________ than 990.

989 ○ 990.

706 is ______________ than 707.

706 ○ 707

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	5	4

Write the correct sign >, <, or = in each circle.

Remember, = means equals.

123 < 130 470 ○ 411 234 ○ 234

324 ○ 329 639 ○ 589

479 ○ 500

853 ○ 783 901 ○ 990

363 ○ 336 200 ○ 200 112 ○ 121

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	5	5

Write the correct sign >, <, or = in each circle.

300 (<) 310

560 ○ 506

454 ○ 445

982 ○ 982

201 ○ 210

726 ○ 762

98 ○ 89

674 ○ 674

853 ○ 835

517 ○ 571

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	07	5	6

Write the correct sign = or ≠ (not equal) in each circle.

102 (≠) 120

312 ○ 475

14¢ + 8¢ ○ 16¢

150 + 30 ○ 200 − 20

350 ○ 350

140 + 120 ○ 160 + 110

1 nickel ○ 4 pennies

390 − 60 ○ 330 − 10

For extra practice, do Page 11.

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	07	5	7

Write the correct sign >, <, or = in each circle.

$32 \div 4$ (>) $3 + 2$

$27 \div 3$ ○ $17 - 6$ $18 \div 2$ ○ $3 + (2 + 1)$

5×9 ○ $20 + 10$

$16 \div 4$ ○ 4×1 $25 \div 5$ ○ $5\overline{)25}$

$0 \div 5$ ○ 5×1

$8 \div 8$ ○ 0×1 $3\overline{)27}$ ○ $4 + (3 + 2)$

$3\overline{)18}$ ○ $3 + 3$ 10×2 ○ $40 \div 2$

For extra practice, do Page 12.

TOTAL POINTS	NUMBER CORRECT
11	

LEVEL	UNIT	SKILL	PAGE
D	07	5	8

Write the correct sign >, <, or = in each circle.

1 nickel + 10 pennies (=) 5 pennies + 1 dime

1 nickel + 2 pennies ○ 8 pennies

1 dime ○ 10 pennies

1 nickel + 6 pennies ○ 1 dime

12 inches ○ 1 foot

16 inches ○ 1 foot + 3 inches

1 $\frac{1}{2}$ feet ○ 20 inches

2 feet ○ 1 yard

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	07	5	9

CET I

Put >, <, or = in the circle to make an equation.

TL. PTS.	
14	100%
NO. OF PTS.	%
13	93
12	86
11	79
10	71
9	64
8	57
7	50
6	43
5	36
4	29
3	21
2	14
1	7

$36 \div 4$ ○ $24 \div 3$

$10 - 7$ ○ 0×3

7×4 ○ $14 \div 14$

$16 \div 4$ ○ $15 - 9$

3×2 ○ $3 + 2$

$38 - 24$ ○ $6 + 8$

3×3 ○ $20 \div 2$

$42 - 35$ ○ $42 \div 6$

10 cups − 7 cups ○ 12 cups ÷ 3

4 quarts + 1 quart ○ 5 quarts × 1

3 feet × 4 ○ 6 feet + 6 feet

72 inches − 28 inches ○ 15 inches + 29 inches

21 days ÷ 3 ○ 14 days − 5 days

25¢ ÷ 5 ○ 3¢ × 2

Write = or ≠ in each circle.

35 − 25 ≠ 13 − 2

85 + 2 ○ 81 + 7

99 − 56 ○ 85 − 42

3 × 2 ○ $2\overline{)18}$

1 × 1 ○ 0 ÷ 1

35 ÷ 5 ○ 7 × 1

53 − 20 ○ 39 − 26

43 + 18 ○ 35 + 26

85 − 22 ○ 32 + 33

5 × 5 ○ 18 + 7

$2\overline{)18}$ ○ 18 ÷ 2

5 + (5 + 5) ○ 5 + (2 × 3)

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	07	5	11

Write the correct sign >, <, or = in each circle.

0 × 5 (<) 5 × 1

3 × 3 ○ 9 ÷ 3

14 − 9 ○ 5 ÷ 1

12 ÷ 3 ○ 8 ÷ 2

5 × 2 ○ 2 × 5

15 − 7 ○ 3 × 3

11 − 7 ○ 2 × 2

3 × 6 ○ 1 × 9

4 × 10 ○ $10\overline{)40}$

TOTAL POINTS	NUMBER CORRECT
	9

LEVEL	UNIT	SKILL	PAGE
D	07	5	12

CET II

TL. PTS.	
14	100%
NO. OF PTS.	%
13	93
12	86
11	79
10	71
9	64
8	57
7	50
6	43
5	36
4	29
3	21
2	14
1	7

Put >, <, or = in each circle.

33 inches + 2 inches ○ 5 inches + 50 inches

3 × 4 days ○ 3 days + 3 days + 3 days

27 yards ÷ 3 ○ 17 yards − 8 yards

4¢ × 4 ○ 4¢ ÷ 4

16 hours ÷ 4 ○ 20 hours ÷ 5

32 feet − 28 feet ○ 21 feet ÷ 3

6 inches × 11 inches ○ 20 inches − 5 inches

Put = or ≠ in the circle.

$\frac{1}{2}$ ○ $\frac{1}{4}$

8 × 2 ○ 4 × 4

55¢ + 5¢ ○ 99¢ − 39¢

45 ÷ 5 ○ 3 × 4

11 ÷ 1 ○ 20 ÷ 2

22 + 32 ○ 40 + 10

18 ÷ 2 ○ 30 − 10

LEVEL	UNIT	SKILL	PAGE
D	07	5	13

LEVEL D, COMBINATION OF PROCESSES, SKILL 5

OBJECTIVE: Supplies the missing sign >, < , =,or ≠ with addition, subtraction, multiplication, and division expressions. Skills involved are up to D-COP. Number limits determined by previous objectives.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Circles the numeral for the greater of two numbers.	
2.	Circles the numeral for the lesser of two numbers.	
3.	Writes "greater" or "smaller" and ">" or "<" to make true statements.	
4.	Writes "greater" or "smaller" and ">" or "<" to make true statements.	
5.	Writes > , <, or = to make true number statements.	
6.	Writes >,< , or = to make true number statements.	
7.	Writes = or ≠ (includes comparing nickels, pennies, and sums).	11
8.	Writes >,< , or =.	12
9.	Writes > ,< , or = for units of measurement or money.	
10.	CET I.	
	CET II.	13

Circle pages that are to be done.

CET I

Add or subtract.

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

9	14	19	54
+ 2	+ 35	− 9	− 12
____	____	____	____

25¢ − 10¢ = ____¢

3 feet + 6 feet = ____ feet

5 cups + 1 cup = ____ cups

10 pints − 4 pints = ____ pints

12 inches	14	15 minutes	9 quarts
+ 11 inches	− 8	− 7 minutes	+ 3 quarts

Add or subtract.

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

927	23	12	56
− 148	− 15	+ 18	+ 76
____	____	____	____

18 inches + 4 inches = ____ inches

48 cents − 29 cents = ____ cents

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LEVEL	UNIT	SKILL	PAGE
D	07	1	7

CET I

TL. PTS.	
9	100 -
NO. OF PTS.	
8	89
7	78
6	67
5	56
4	44
3	33
2	22
1	11

Add or subtract as requested.

36 hours	78 inches	247 days
+ 87 hours	− 49 inches	+ 174 days
____ hours	____ inches	____ days

25¢ − 16¢ = ____¢

61 days + 79 days = ____ days

52 weeks − 17 weeks = ____ weeks

88 feet	276 yards	312 days
− 39 feet	+ 97 yards	− 116 days
____ feet	____ yards	____ days

Multiply or divide as requested.

TL. PTS.	
4	100 -
NO. OF PTS.	-
3	75
2	50
1	25

5 inches × 4 = ____ inches

30 feet ÷ 5 = ____ feet

4 yards × 4 = ____ yards

42 feet ÷ 7 = ____ feet

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LEVEL	UNIT	SKILL	PAGE
D	07	2	8

CET I

Multiply or divide.

TL. PTS.	
10	100%
NO. OF PTS.	%
9	90
8	80
7	70
6	60
5	50
4	40
3	30
2	20
1	10

5 feet
× 5
____ ____

4 inches
× 2
____ ____

3 days
× 4
____ ____

40 hours ÷ 4 = ____ hours

12 days ÷ 3 = ____ days

27 yards ÷ 3 = ____ yards

24¢ ÷ 4 = ____¢

18 weeks ÷ 3 = ____ weeks

9 ÷ 9 = ____

7 × 3 = ____

Solve.

TL. PTS.	
2	100
NO. OF PTS.	
1	50

Tommy spends 5 hours in school each day. How many hours does he spend there in five days?

____hours

Lucy has 62¢ and her sister has 21¢. They put their money together and bought some doll house furniture for 75¢. How much did they have left?

____¢

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CET I

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

Solve these problems.

Joe spent 7 cents for bubble gum, a nickel for a candy bar and a dime for popcorn. How much money did he spend?

__________ cents

Mary's allowance is 30 cents a week. She spends 5 cents on candy, 5 cents for gum and she puts 10¢ in the bank. How much does she have left?

__________ cents

Jill is 42 inches tall. Her big brother Jack is 65 inches tall. How much taller is Jack than Jill?

__________ inches

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Write the correct sign, or <, in each circle.

9 ÷ 3 ◯ 10 ÷ 5

16 feet + 9 feet ◯ 26 feet

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LEVEL	UNIT	SKILL	PAGE
D	07	4	7

CET I

Put >, <, or = in the circle to make an equation.

TL. PTS.	
14	100%
NO. OF PTS.	%
13	93
12	86
11	79
10	71
9	64
8	57
7	50
6	43
5	36
4	29
3	21
2	14
1	7

36 ÷ 4 ○ 24 ÷ 3

10 − 7 ○ 0 × 3

7 × 4 ○ 14 + 14

16 ÷ 4 ○ 15 − 9

3 × 2 ○ 3 + 2

38 − 24 ○ 6 + 8

3 × 3 ○ 20 ÷ 2

42 − 35 ○ 42 ÷ 6

10 cups − 7 cups ○ 12 cups ÷ 3

4 quarts + 1 quart ○ 5 quarts × 1

3 feet × 4 ○ 6 feet + 6 feet

72 inches − 28 inches ○ 15 inches + 29 inches

21 days ÷ 3 ○ 14 days − 5 days

25¢ ÷ 5 ○ 3¢ × 2

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LEVEL	UNIT	SKILL	PAGE
D	07	5	10

What are the procedures followed in prescribing CET's?

The teacher decides to prescribe a CET on a skill when there is definite information that the student will most probably perform successfully on the CET. This information comes from three sources:

1. Measured performance on the prescribed worksheets. Since each completed worksheet is scored by the aide and the scores are entered alongside the prescription, the teacher can follow the student's progress (or lack of progress) closely.
2. Observation of the student's behavior as he works out solutions to problems, handles materials, manipulative devices and equipment related to the skill, and as he responds to discussions and questions about the skill. When these observations are kept closely related to the prescribed skill, the teacher finds that there are many other invaluable ways for assessing student progress besides pencil and paper performance.
3. Pretest half of the preceding CET. Since the preceding CET includes a limited pretest of the skill, mastery of near mastery of this section tells the teacher to send the student directly to the skill's own CET.

   For example, a student takes C-Num.-1 CET and scores 95% on the C-Num.-1 section and 80% on the limited pretest section for C-Num.-2. The teacher thinks the student may have mastered C-Num.-2 while learning C-Num.-1. To substantiate this judgement and forestall prescribing unnecessary work, the student is given a test sheet from the CET pad for C-Num.-2. A score of 85% or over on the C-Num.-2 CET indicates mastery of the skill. Therefore, no Skill 2 prescription is needed at all. Another situation that could occur is suggested by the following pretest scores:

D-Num.-1	100%
D-Num.-2	60%
D-Num.-3	95%
D-Num.-4	60%
D-Num.-5	100%

Assume that the pupil has completed working in Skill 2 and has successfully mastered the CET for that skill. In order to give

> him the opportunity to pretest out of Skill 4, he should be given the bottom part of the CET for Skill 3 (which tests Skill 4.) If he does poorly on the test he should be assigned work in D-Num.-4. If he does well in this pretest he should be assigned D-Num.-4 as an additional check on this mastery.

When the teacher has decided to prescribe the CET for a particular skill, the date of prescription, the teacher's initials, the abbreviation CET and its page number are entered by the teacher on the student's Prescription Sheet. After the student is given the CET, the aide scores the test and enters the scores and percentages for both halves of the CET on the Prescription Sheet.

Examine the following Mathematics Prescription Sheets A, B and C:

1. Mathematics Prescription Sheet A indicates the entries used for prescription writing. The CET is prescribed and entered in this section.

2. Mathematics Prescription Sheet B describes the section used to enter the results of the CET. Note that the student may act as the scorer of his own test. Many IPI teachers, as they work towards developing self-initiation and self-direction in their students, encourage this type of activity for the students. In fact, as the student grows in these areas, a number of IPI teachers have guided the students into self-prescription writing.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET A

STUDENT NAME ____________________ STUDENT NUMBER ______________

SCHOOL STAMP ______________

GRADE ________ ROOM ________ UNIT ____________________

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
↑	↑	↑	↑	↑	↑	↑	↑				

Points earned on worksheets.

Maximum points on worksheets.

Teaching method notes.

Learning setting and teaching method.*

Sheets in S.T.S. booklet (includes C.E.T)

Skills circled in pretest box.

Prescriber's initials.

Date prescription is written.

* INSTRUCTIONAL TECHNIQUES

CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES

SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
DATES									

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MATHEMATICS PRESCRIPTION SHEET B

STUDENT NAME ______________________ STUDENT NUMBER ______________

SCHOOL STAMP ____________

GRADE ________ ROOM ________ UNIT ______________________

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
CET results for prescribed skill								↑	↑	↑	↑
Limited pretest results for next skill in unit.											

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
DATES									

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ipi MATHEMATICS PRESCRIPTION SHEET C

STUDENT NAME Phyllis Carey
STUDENT NUMBER
SCHOOL STAMP

GRADE 3 ROOM 12 UNIT D- Geom.

Mastery Pull

UNIT DATES	
UNIT BEGAN	10-31
UNIT ENDED	11-8
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-31	C.C.	Pretest									
11/1	E.P.	1	Read Student Page								
			1	02, 01		2	2				
			3			6	6				
			17			10	10				
11/2	E.P.		16	CET				5/5	100	0/3	0
11/3	E.P.	2	Read Student Page								
			2	03, 08		7	7				
			3			13	13				
			5			9	5				
11/6	E.P.		13	02		7	7				
			8			6	5				
			10			12	12				
11/7	E.P.		11	CET				4/4	100	4/4	100
11/7	E.P.	3	Read Student Page								
			22	CET				5/5	100		
11/8	Posttest										

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	3	2	67	3	100				
2	2	1	50	2	100				
3	5	4	80	5	100				
	DATES	10/31		11/8					

Mathematics Prescription Sheet C Summary

Phyllis Carey: D-Geometry

1. Selection of IPI Unit:

   Selects and assigns D-Geom.

2. Diagnosis of Learning Needs:

   Administers D-Geom. Pretest.

3. Writing a Prescription:

   a. Prescribes Skill 1 (pages 1, 3, 17 and Inst. Tech. 02, 01)

   b. Prescribes Skill 2 (pages 2, 3, 5 and Inst. Tech. 03, 08)

   c. Extends Skill 2 prescription (pages 1, 3, 8, 10 and Inst. Tech. 02)

4. Implementing the Prescription:

   a. Phyllis works on prescription for Skill 1.
   Teacher guides Phyllis through prescription.

   b. Phyllis works on prescription for Skill 2.
   Teacher guides Phyllis through prescription.
   Same as above for extended prescription for Skill 2.

5. Ongoing Evaluation:

   a. Teacher evaluates Skill 1 worksheets and student performance and assigns D-Geom.-1 CET.
   Student scores 100% on Part 1 of CET and 0% on Part 2 and is assigned to Skill 2. (Return to step 3b.)

   b. Teacher evaluates Skill 2 worksheets and student performance and extends prescription to skill 2. (Return to extended prescription of Skill 2 in step 3c.)

   c. Teacher evaluates Skill 2 in extended prescription and assigns D-Geom.-2 CET.
   Student scores 100% on Part 1 of CET and 100% on Part 2 of CET.
   Teacher assigns D-Geom.-3 CET.
   Scores 100% on CET.

6. Mastery Testing:

   Selects and administers D-Geom. Posttest.
   Student scores 100% on each unit skill in D-Geom. and is ready for next unmastered unit in the Continuum.

The following completed Prescription Sheets are included for purposes of group discussion. Review the following sheets as preparation for this discussion. Then form a small group of 4-5 teachers to discuss the development of the five prescriptions.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joan Wiley

STUDENT NUMBER ____________

Mastery Pull

SCHOOL STAMP ____________

GRADE 1 ROOM ______ UNIT B- P.V.

UNIT DATES	
UNIT BEGAN	10/6
UNIT ENDED	10/10
DAYS WORKED	3

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10/6	CJC	Pretest									
10/7	E.P.	1	Read Student Page								
			3			3	4				
			6			3	3				
			17			4	4				
			18			3	3				
10/8	E.P.		15	CET				10/10	100	4/4	100
10/8	E.P.	2	Read Student Page								
			9	CET							
10/10	E.P.	Postest									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	3	60	5	100				
2	5	2	40	5	100				
DATES		10/6		10/10					

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ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joseph Howard STUDENT NUMBER

Mastery Pull

SCHOOL STAMP

GRADE ______ ROOM ______ UNIT D - Sp. Topics

UNIT DATES	
UNIT BEGAN	10-2
UNIT ENDED	10-11
DAYS WORKED	6

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-2	C.J.	Pretest									
10-3	E.P.	1	Read Student Page								
			1			6	6				
			3	01		12	9				
			5			8	7				
			7			16	14				
			9			19	19				
			12			17	17				
10-5	E.P.		16	CET				12/13	93	2/2	100
10-6	E.P.	2	Read Student Page								
			11	CET				4/4	100	2/2	100
10-6	E.P.	3	Read Student Page								
			8	CET				4/5	80	(T.I.)	
10-9	E.P.	Posttest									
10/10	E.P.	3	1	01		3	3				
			3			10	9				
			11					4/4	100		
10/11	E.P.	Posttest (use Pre)									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	10	4	40	9	90	10	100		
2	5	4	80	5	100	5	100		
3	5	2	40	3	60	5	100		
DATES		10/2		10/9					

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ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME John Rocco

STUDENT NUMBER

Mastery Full

SCHOOL STAMP

GRADE 2 ROOM UNIT B - Fractions

UNIT DATES	
UNIT BEGAN	10-3
UNIT ENDED	10-6
DAYS WORKED	3

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-3	CJC	Pretest									
10-3	E.P.	1	Read	Student		Page					
			3			4	2				
			5			6	6				
			6			7	6	4/7	78		
10-4	E.P.		15	CET							
10-5	E.P.		1								
			12					9/9	100		
10-5	E.P.		15	CET							
10-6	E.P.	Posttest									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	6	3	50	6	100				
DATES		10-3		10-6					

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Philip Johnson STUDENT NUMBER ____

SCHOOL STAMP ____

GRADE 4 ROOM ____ UNIT D-Div.

Mastery Full

UNIT DATES	
UNIT BEGAN	10-2
UNIT ENDED	10-13
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-2	C.G.	Pretest									
10-3	E.P.	1	Read Student Page								
			5			21	21				
			7			5	5				
			14	CET				6/6	100	3/4	75
10-4	E.P.	2	Read Student Page								
			2			26	26				
			4	01		3	3				
			7			6	4				
			9			10	9				
11-1	E.P.		12	CET				9/10	90	3/3	100
10-6	E.P.	3	Read Student Page								
			11	CET (ped, part II only)						5/5	100
10-9	E.P.	4	Read Student Page								
			9	CET				12/13	93	6/6	100
10-9	E.P.	5	Read Student Page								
			9	CET (ped, part II only)						5	71

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	5	4	80	5	100				
2	10	7	70	9	90				
3	5	5	100	5	100				
4	20	8	40	18	90				
5	6	6	100	6	100				
6	6	4	67	6	100				
7	4	1	25	4	100				
DATES		10-2		10-3					

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Philip Johnson STUDENT NUMBER ________ UNIT D-Div.

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-9	E.P.	Read Student Page									
			8	02		11	10				
			9			12	11				
10-11	E.P.		11	CET				12/14	86	1/2	50
10-11	E.P.	7	Read Student Page								
			3	03		8	6				
			4			8	6				
			7	09		3	3				
			8			3	3				
10-12	E.P.		9	CET				4/4	100		
10-13	E.P.	Posttest									

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Kate Brown

STUDENT NUMBER

SCHOOL STAMP

Mastery Drill

GRADE 6 ROOM UNIT G-C.O.P.

UNIT DATES	
UNIT BEGAN	10-19
UNIT ENDED	10-31
DAYS WORKED	9

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-19	C.R.	Pretest									
10-20	E.P.	1	Read Student Page								
			1	04							
			2								
			5								
			6								
10-23	E.P.		11	11							
			12								
10-24	E.P.		19	CET				8/8	100	4/4	100
10-24	E.P.	3	Read Student Page								
			11	CET (grad. part II only)						1/2	50
10-25	E.P.	4	Read Student Page								
			5			4	3				
			6			3	3				
			7			3	3				
10-26	E.P.		8	CET							
10-26	E.P.	5	Read Student Page								
				CET grad.				6/7	86		
10-27	E.P.	Posttest									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	5	0	0	4	80	5	100		
2	5	5	100	4	80	5	100		
3	6	6	100	6	100	6	100		
④	5	3	60	5	100	5	100		
⑤	5	4	80	5	100	5	100		
DATES		10-19		10-27		10-31			

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IPI MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Kate Brown STUDENT NUMBER ________ UNIT G-C.O.P.

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-30	E.A.	1	Read student page								
			17	02		24	22				
			18			8	8				
			25	CET				8/8	100	4/4	100
10-30	E.A.	2	Read student page								
			10	CET				6/6	100		
10-31	E.A.	Posttest (Use Pre)									

TEACHING IN IPI

PROCEDURES FOR USING CET'S

Teacher	Student	Aide
1. Reviews student performance on prescription for skill or looks ahead to next unmastered skill.		
a. Predicts high probability of success on CET.		
2. Prescribes and administers CET for skill.	Takes prescribed CET.	
a. Reads directions as needed.	Gives completed CET aide.	Scores CET. Enters scores on Prescription Sheet.
3. Examines CET scores.		
a. 85% or over on Part 1 indicates mastery of skill and student is moved to next unmastered skill. 85% or over on Part 2 indicates student may have mastered the next skill. If this is not supported by his Pretest score on skill, he is given CET for skill to determine mastery.	Starts on next unmastered skill. Takes CET for skill in Part 2 or Starts on next unmastered skill.	Scores worksheets. Scores CET. Enters scores on Prescription Sheets.
b. Below 85% on Part 1 indicates lack of mastery of prescribed skill and prescription is extended.	Works on extended prescription.	
Below 85% on Part 2 indicates probable lack of mastery of next skill. If Pretest score or CET score for the skill supports this, student is assigned a prescription for the skill.	Works on prescription for the skill.	

POSTTEST: Section III: Curriculum Embedded Tests

The following items constitute a posttest.

The answer key which accompanies the test is correlated to the instructional materials in this section. Based upon the right and wrong responses you have made on the test, the answer key will direct you to those pages on which you should work to achieve 100% mastery.

Use the directions given with the pretest.

Select the best answer:

1. What is the next prescription?

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
D-Numeration-1	100			
D-Numeration-2	100			
D-Numeration-3	97			
D-Numeration-4	76	Completed	90	95
D-Numeration-5	82			

a. Work in D-Numeration-5.

b. D-Numeration-5 CET.

c. D-Numeration Posttest. __________

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
B-SOM-1	87	Completed	95	80
B-SOM-2	83	Completed	100	60
B-SOM-3	76			
B-Som-4	40			

a. Work in B-SOM-3.

b. B-SOM-3 CET.

c. B-SOM-3 CET (Part 1). __________

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
E-Spec. T.-1	70	Completed	100	65
E-Spec. T.-2	80	Completed	100	65
E-Spec. T.-3	60	Completed	95	

a. E-Spec. T.-Posttest.

b. E-Spec. T.-1 CET (Part 2).

c. Additional work in E-Spec. T.-3. __________

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
C-Money-1	70	Completed	100	73
C-Money-2	70	Completed	95	96
C-Money-3	80	Completed	73	

a. C-Money Posttest.

b. Alternate CET for C-Money-3.

c. Additional work in C-Money-3. __________

Unit Skill	Pretest Percent	Prescription	CET Percent Part 1	CET Percent Part 2
E-Time-1	100	Completed	100	60
E-Time-2	50	Completed	100	95
E-Time-3	95			
E-Time-4	76			
E-Time-5	82			

a. E-Time-3 CET (Part 2).

b. E-Time-4 CET.

c. E-Time-4 CET (Part 1). __________

2. The CET II for a skill is:
   a. Listed as supplementary material in the STS booklet.
   b. Bound in a pad of identical CET's.
   c. Both a and b. __________

3. There are CET's for:
   a. Every skill but the last one in every unit.
   b. Every skill in the Continuum.
   c. Every unit in the Continuum. __________

4. When a student scores under 85% on Part 1 of a CET I, the teacher:
   a. Uses the CET to diagnose the student's learning difficulties.
   b. Assigns the remaining worksheets in the' STS Booklet for the skill tested by the CET.
   c. Assigns Part 1 of CET II. ____________

5. A score of 85% or over on Part 1 of a F-Frac.-10 CET tells us that the student:
   a. Is ready to take F-Frac.-11 CET (Part 1).
   b. Is ready for work in F-Frac.-11.
   c. Has mastered F-Frac.-10. ____________

6. CET's are designed:
   a. To test a student's mastery of two successive unit skills in one test.
   b. To test a student's mastery of a unit skill and to diagnose the student's difficulties with the next skill in one test.
   c. To test a student's mastery of a unit skill and to pretest the next unit skill in one test. ____________

ANSWER KEY

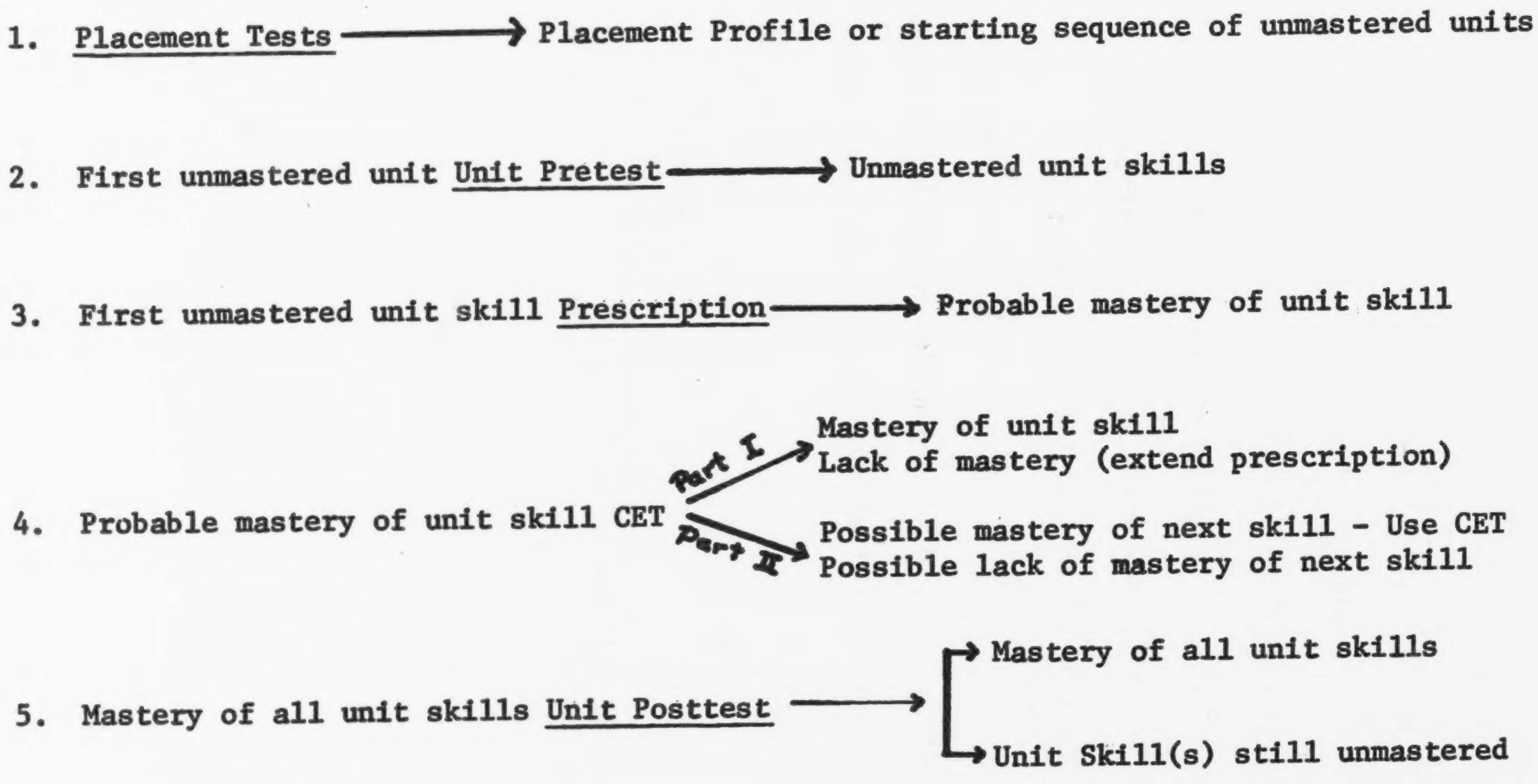
POSTTEST: Section III: IPI Curriculum Embedded Tests (pp. 198-302)

1. b
   a
   a
   c
   a
2. a
3. b
4. a
5. c
6. c

TEACHING IN IPI
DIAGNOSIS OF STUDENT ACHIEVEMENT
SUMMARY SHEET

	Sample	Purpose	Administered	Label	Location
Placement Tests	Levels B-G extensively.	Locate student in all Areas of Continuum.	Upon initial entry into Continuum or at start of the school year.	Level	Bound in booklets by levels.
Pretests	All skills in a unit intensively.	Identify and diagnose unmastered skills in unit or alternate form of Posttest.	Before working in a unit or As second Posttest.	Unit (Level-Area)	Bound in booklets by units.
CET	One unit skill intensively; next skill briefly.	Assess mastery of skill; limited pretest of next skill.	After completing prescription on skill; pretest of skill.	Unit Skill (Level-Area-Skill #); Form I or II	Bound in Standard Teaching Booklet for skill; CET I Pad.
Posttests	All skills in a unit intensively.	Assess mastery of unit; identify and diagnose skill still unmastered.	After all skills in unit are mastered.	Unit (Level-Area)	Bound in booklets by units.

IPI Achievement Tests



1. **Placement Tests** → Placement Profile or starting sequence of unmastered units

2. First unmastered unit **Unit Pretest** → Unmastered unit skills

3. First unmastered unit skill **Prescription** → Probable mastery of unit skill

4. Probable mastery of unit skill CET
   - Part I → Mastery of unit skill / Lack of mastery (extend prescription)
   - Part II → Possible mastery of next skill - Use CET / Possible lack of mastery of next skill

5. Mastery of all unit skills **Unit Posttest** → Mastery of all unit skills / Unit Skill(s) still unmastered

IPI Testing Sequence

MAKING INSTRUCTIONAL DECISIONS

This section will give you an opportunity to start building a basis for instructional decision-making in individualized instruction and to apply this to developing a number of your own prescriptions in Volume 4.

This section contains a brief introudction to the importance of the teacher's professional judgment in developing a prescription.

As you work through this section and Volumes 4, 5, and 6, team up with other teachers by grade level(s), interests and/or needs to exchange information. Since IPI teachers work together as an instructional team, these team experiences will be useful to you.

INTRODUCTION

To the casual observer, IPI may appear to be a mechanical way of planning and conducting instruction in the classroom. This could easily be the case if children differed only in their rates of learning. In that case, the teacher would simply map out a standard program of instruction for the school year and move the students through at different speeds. Instructional decision-making would be at a minimum since materials, procedures, teaching methods, etc. would be arbitrarily predetermined for the entire class.

But this is not IPI. IPI is a system of individualized instruction that recognizes that children differ in a variety of observable ways. It offers the teacher a framework within which to individualize instruction as well as some prepared materials to help in the task. However, since neither is sufficient to individualize instruction, the IPI teacher is encouraged to add the essential ingredient of instructional decisions. In IPI, instructional decisions are choices a teacher makes in putting together a unique program of studies for a student.

The IPI teacher starts making instructional decisions as soon as the student is placed in the Continuum and choices are made in answering these questions:

1. Which unit skills should this student be working on?
2. Which skill sheets should be prescribed?
3. Which Instructional Techniques should be prescribed?
4. How long should this student spend on a unit skill(s)?
5. What else can I devise to help this student in mastering the prescribed skills?

6. What other skils do I want this student to learn?

The series of answers to these questions asked about a particular student will result in a unique combination of learning experiences called the student's learning prescription.

The answers to these questions cannot be based upon IPI test data and skill sheet scores alone. Teacher observation of what the student is doing and how he is doing it is important. Generally speaking, IPI teachers make their instructional decisions based upon information gathered from:

1. Test information from IPI Placement Tests, Unit Pretests, CET's and Unit Posttests.
2. Student performance on prescribed IPI tests and skill sheets.
3. Observation of student's behavior as he works out solutions to problems, handles materials, manipulative devices and equipment, and as he responds to discussions and answers questions in IPI situations and non-IPI situations.
4. Planning sessions with other professional personnel sharing instructional responsibility for the student.

In addition, the IPI teacher collects information about the student from the more usual sources such as cumulative records and parent-teacher conferences.

There is no pat formula that can be used in building a prescription from these data. The teacher makes a professional judgment about the meaning of these data and starts choosing learning experiences for the student based on the judgment made. IPI teachers deviate from recommended IPI guidelines when there is some very concrete evidence to indicate the need to do so.

Once choices are made, the teacher records them on the Prescription Sheet. The Prescription Sheet is an important two-way communication link between the student and the teacher. The teacher communicates to the student the choices made by listing the: unit and unit skill(s) that have been assigned to the student; specific tests to be taken; particular skill sheets to be completed; and the Instructional Techniques to be used to bring about mastery of the skill(s). Information about student progress is communicated to the teacher through the Prescription Sheet in the form of skill sheet scores, test results and number of days worked.

The teacher supplements this communication link as needed in as many ways as can be devised. Frequently, the teacher attaches a brief note to the student's work folder or confers with the student to exchange additional information.

GUIDELINES FOR INSTRUCTIONAL DECISIONS IN DEVELOPING A PRESCRIPTION

1. Test information from IPI Placement Tests, Unit Pretests, CET's, and Unit Posttests.
2. Student performance on prescribed IPI tests and skill sheets.
3. Observation of student's behavior.
4. Planning sessions.

1. Test Information from IPI Placement Tests, Unit Pretests, CET's, Unit Posttests

(Review previous sections on IPI tests.)

Placement test information will be discussed first. This will be followed by a discussion which covers jointly the use of pretest, CET and posttest information. These three tests are combined in discussion since they are similar in sampling and construction, and they test each unit skill separately.

IPI PLACEMENT TESTS, in addition to locating the student in the Continuum and providing an entry into the Continuum, offer the teacher additional information upon a little probing. The magnitude of scores on each level of a particular area can reveal a history of weakness in the area or an uneven profile of mastery. A teacher usually goes back into Placement Test scores as part of diagnosing a student's persistent learning problem and looks for "pockets" of weakness. This helps the teacher pinpoint a possible source of the difficulty.

Example: A teacher decides to check into the background of a student's inability to retain mastery of D-Numeration. The Placement Profile shows that the student had scored 18% in C-Num. He was subsequently tested in B-Num. and scored 82% in it. Technically, 80% is Placement Test mastery and he was placed back in C-Num. This sequence of low and borderline scores alerts the teacher to the possibility that the student's poor retention might be due to "borderline" mastery in B-Num. and extreme weakness in C-Num. With the potential source of difficulty (C-Num.) pinpointed, the teacher goes directly to C-Num. data to start a closer analysis of the problem.

UNIT PRETESTS, CETs AND UNIT POSTTESTS are similar tests in that they all measure a student's level of mastery of unit skills. Though each type is used at different times (before, during and after work), the tests provide point and percent scores for the unit skill(s) tested, pretest averages, posttest averages, and actual samples of the student's work.

Point and percent scores for a unit skill and unit percent averages help the teacher pick out the skills that are already mastered, the skills that are cases of borderline mastery, and the skills that definitely require a prescription. A skill score of:

100%-85% usually indicates acceptable mastery of a skill and no prescription is required. Occasionally, a teacher judges that a pretest score of 85% or a diagnostically-used CET score of 85% is not valid and decides to examine the actual skill test items to evaluate the student's work before making a decision about mastery. Usually an 85+% score on a posttest or a CET (prescribed after successful work) is accepted as mastery without any need for further checking.

85%-80% is a borderline score which indicates near mastery of a skill. This range of scores in a pretest directs the teacher to examine the right and wrong responses in the skill test before making a decision to prescribe work. On a posttest or CET, 80%-85% in a skill directs the teacher to the test items and back to the work completed in the skill before an extended prescription is written.

79%-0% indicates a definite need for a prescription in the skill and directs the teacher to examine the right and wrong responses in the skill test for a closer diagnosis. In addition, when the 79%-0% is a posttest or CET score the teacher usually examines the work done previously in the skill.

The size of the score (79%-0%) indicates the size of the gap between the student's current level of achievement and the desired level of mastery.

Extremely low scores (0%-40%) may mean that the student is quite weak in that particular unit or in the math area in general. The teacher should determine which is the case before starting any prescription. 0%-40% scores may also mean that the student has made some mechanical error(s) in test-taking. This should be determined before accepting the score as lack of mastery.

Scores ranging from 40%-60% and 60%-80% indicate increasing degrees of mastery. With this in mind, the teacher can project that skills with relatively higher scores will require shorter and less intensive prescriptions, and can plan accordingly.

Point and percent scores for a skill help the teacher quickly sort out skills into categories of mastery, borderline mastery and no mastery. Teacher judgment and familiarity with the content of IPI tests play an important part in this sorting out process. Since the process singles out the skills requiring further attention, it is a vital one.

Pretest and Posttest Averages provide an immediate picture of overall strength in the unit. They are the averages of the skill scores in the unit. A unit percent average by itself is not much help to a teacher. A unit average is useful when related to the unit skill scores to determine if there is a general weakness in the unit or an isolated weakness in a specific skill. For example, a unit average of 73% can be obtained from both of these sets of skill scores--90, 90, 20, 90 and 75, 70, 68, 77. In the first set, the 73% is due to a weakness in one skill. In the second set, the 73% indicates a weakness in each skill in the unit.

2. Student Performance on Prescribed IPI Tests and Skill Sheets

Detailed evidence of how the student behaves or performs the required skill is found in his completed tests and skill sheets. For example, problems, or work items contained in IPI tests and skill sheets ask the student to perform the skill as stated in the skill objective.

The evidence the teacher gathers from examining the completed tests and skill sheets provides one basis for instructional decisions in developing a prescription. The teacher diagnoses the student's work to determine:

1. A pattern of errors, that is, the kinds of work items the student can do and cannot do.
2. The frequency of errors, that is, how many times the student repeats the same type of error.

Pattern of errors: The student's correct and incorrect responses on work items help the teacher break down the skill objective into smaller behaviors. The incorrect responses are diagnosed as small behaviors needing a prescription.

Example 1: B-Num.-2 requires the student to read and count orally numerals 0-100. The student's work on skill sheets shows he can read and count numerals 0-20 but he cannot go from one decade to another for numerals 21-100. He has trouble in particualr going from 29-30, 39-40, 49-50,.....99-100. Based on this diagnosis, the teacher extends the prescription by prescribing STS B-Num.-2 skill sheets containing counting exercises in the upper decades and assigns a number-line activity or chart to help in bridging the decades.

Example 2: D-Mult.-4 requires the student to write or state products of multiplication facts in which 2, 3, 4, and 5 are factors. A student scores 81% on Part 1 of CET I for this skill. Inspection of this portion of the test indicates that six of the errors made occurred in the examples involving 3 and 5 as factors. A quick check into the last part of the prescription just completed by the student shows that this type of error occurred on his skill sheets also. Since the student's performance in D-Mult.-1,2,3 and in the area of Addition has been consistently good, the teacher decides the student needs only additional drill in the 3 and 5 tables. The student is directed to use a set of multiplication flashcards (factors 3 and 5) and is assigned to a peer tutor for drill. In addition, one new D-Mult.-4 STS skill sheet is prescribed to follow this drill exercise. The teacher suspends further judgment until this latest prescription is completed.

Frequency of errors: The frequency of errors that a student makes on a skill sheet or skill test is an indication of the relative strength or weakness in that skill. While determining the pattern of errors, the teacher also notes how many times the student repears the same type of error. The more frequently the error-type is made, the more the teacher must focus the student's prescription on changing that specific behavior.

When diagnosing the frequency of errors in individual skill tests (pre and post) and CET's, the teacher examines the number and types of errors made on a *sample* of work items for the particular skill. The prescription following this should focus on the types of errors made and should give greater emphasis to the error-types most frequently occurring.

When diagnosing the frequency of errors on skill sheets, the teacher examines the number and types of errors made on the *actual* work items for the particular skill. Therefore, not only are the skill sheets examined separately but the complete set of skill sheets prescribed simultaneously is also reviewed in toto. Since there is no established mastery criterion for skill sheets, teachers must rely heavily upon their judgment of the student's work on the skill sheets. The teacher's judgment is formed by comparing the student's work on the set of skill sheets with the behavioral statement of the required skill objective. In addition, the teacher previews the mastery test (pre, post or CET) to be taken and asks the question, "Is there a good chance that this student will score over 85% on this test?" Occasionally, when the teacher is unable to make this prediction of success with confidence, a skill sheet that closely resembles the mastery test is prescribed. The student's performance on this test-like skill sheet helps the teacher decide whether or not to prescribe the test itself.

Example: B-Num.-8 requires that the student selects which of two (or three) numbers is greater (greatest), smaller (smallest) for numbers to 100; places > or < between two numbers to indicate the greater or lesser. The B-Num. Pretest - Skill 8 score for one student is 60% (6 out of 10 points). Examination of the B-Num.-8 skill test indicates that the student missed 1 out of 5 answers selecting the smallest number from a set of 3, and missed 3 out of 5 answers using the > or < symbols. The teacher quickly reviews the first error-type with the student and receives the correct answer orally. The prescription for B-Num.-8 is then started by prescribing one skill sheet covering the use of the > and < symbols. The student will show it to the teacher after he completes it and the aide has corrected it.

3. Observation of Student's Behavior

The prescriptions an IPI teacher develops are deliberately designed to help the student change his behavior. Sometimes the change is the acquisition of a new IPI math skill, the strengthening of some existing behavior or the extinction of an undesirable one. Since the teacher's focus is on behavioral change, the student's existing behaviors are the data used to make instructional decisions. It is important to observe and interpret the student's performance on IPI tests and skill sheets in order to analyze and prescribe for the specific IPI skill to be mastered. However, the teacher must also take into account and use relevant data about other student behaviors in creating a total learning environment for the student.

Included in these relevant data are:

1. All those behaviors that will help the student learn the desired IPI math skill.
2. All those behaviors that will hamper the student's learning the desired IPI math skill.
3. All behaviors other than the specified IPI math skills that the teacher (or school district) sees as desirable educational goals in a math program.

The following discussion of each of these areas is intended to provide a framework for observing student behavior in IPI. It is not within the scope of these materials to explore fully the complex area of child study. Success in observing and interpreting student behavior will depend greatly upon the expertise the teacher brings to the current situation, the group discussions used in working through these materials, and continued inservice work in child study as IPI is implemented in the classroom.

Behaviors that will help the student learn the desired IPI math skill: The student's interests, attitudes, and preferences are important factors in motivating students and sustaining their attention in any school program. Each time a prescription is written, it should attempt to capitalize upon some behavior that will make it easier or more pleasant for the student to learn the prescribed skill. For example: A desire for peer recognition is used to motivate a student to master a skill in order to tutor another student needing help; a student whose attention span is increased by competition is assigned to small group instruction under teacher supervision; a student who enjoys constructing things is encouraged to make a set of manipulative devices demonstrating his mastery of some math skill or part of a skill. These are familiar examples of techniques used by teachers sensitive to the way children learn best.

Occasionally, when the positive behaviors that help children learn readily are weak or do not exist, IPI teachers de-emphasize prescribing for mastery of the IPI skill temporarily and emphasize prescribing activities to develop or strengthen the positive behaviors. This is a temporary strategy that is well worth the time invested.

This is particularly true in relation to certain behaviors that enable the student to work smoothly in IPI. More specifically, these behaviors are:

1. Following oral and written directions.
2. Obtaining prescribed materials independently.
3. Following a prescription independently.

4. Attempting to solve problems independently before requesting help.
5. Requesting help when unable to solve problems independently.
6. Following IPI procedures for using the aide's services.
7. Working with a variety of adults.
8. Maintaining the order of the student folder.
9. Operating and using disc players, manipulative materials, filmstrip projectors and other equipment called for by the prescription.
10. Selecting and engaging in some constructive activity while waiting for teacher help.
11. Using performance in a prescription for self-diagnosis.
12. Accepting mastery as a criterion.
13. Self-prescribing.

In developing a prescription, it is important to encourage and reward the student in acquiring these behaviors along with mastering the IPI skill.

Behaviors that will hamper the student's learning the desired IPI math skill: Frequently, as a student works on mastering an IPI skill, the teacher will observe the existence of certain other behaviors that impede or hamper the student's progress. They may be certain social behaviors, physical characteristics or improper study skills that make it difficult for the child to achieve mastery. Depending upon the behavior and the teacher's judgment of the situation, the teacher will compensate for the behavior or give the student limited opportunity to exhibit it. Still, with other behaviors, the teacher will work towards extinguishing them while substituting more appropriate ones.

For example: A highly energetic, physically restless child receives a prescription that includes some large motor activity and a minimum of extended pencil and paper exercises; a student who is easily frustrated in learning a new skill is introduced to the skill by the teacher; a student, highly dependent upon teacher help, is initially refused help and directed by his teacher to think of two possible solutions to his latest request for help. The teacher praises his efforts and guides him to the solution of his problem.

Behaviors other than IPI math skills that are desirable educational goals: Frequently, the teacher has a number of over-arching broad educational goals of elementary education, that appear in every curricular area taught. Such broad goals as development of group processes, social applications of math, development of special talents, etc. are persistent themes in many elementary school programs. In addition, IPI, to function successfully as a system, depends upon broad educational goals of self-initiation, self-direction, problem-solving processes, self-evaluation, and self-motivation. In developing prescriptions, an IPI teacher makes every effort to select instructional resources that will contribute toward these goals as well as toward the mastery of the IPI skills.

4. Planning Sessions

During planning sessions, IPI teachers, sharing the instructional responsibility for a particular group of students, meet to share information and plan for their students on a regularly scheduled basis. Thi provides the teacher with:

1. Additional information about the student's behavior as observed by other professionals in different settings.
2. An exchange of ideas and suggestions (old and new) for developing improved prescriptions.
3. Help in analyzing instructional problems and in designing appropriate solutions.

During this time, the teacher gathers more data about the student and increases her repertoire of professional competency. Both of these outcomes can be used to improve the quality of instructional - decision-making in IPI.

PLANNING SESSIONS

IPI works to the best advantage of students when their teachers plan together as an instructional team. Time for planning is scheduled before, during or after the school day. During this time, a particular group of teachers holds planning sessions to collaborate in making instructional decisions about the students assigned to them.

In some IPI schools, planning time also includes regularly scheduled time for prescription writng. When this is done, usually 1-3 teachers work together to develop prescriptions for selected students. This involves some consultation among the teachers as each works on writing prescriptions. Since the practice of scheduling prescription writing time varies from school to school depending upon staff size and time available, and since guidelines for developing a prescription have been discussed in a previous section, this discussion will focus on planning sessions.

The planning sessions give the teachers, as a group, an opportunity to:

1. Review the progress of each student in the assigned classes.
2. Organize students, teachers, and aides for IPI instruction.
3. Share instructional problems with other teachers and to solve them by using the professional experience and thinking of the team.
4. Identify and resolve operational difficulties arising from IPI materials, physical facilities and mechanics.
5. Continue their study of individualized instruction and IPI.

Let's look at a planning session held at one IPI school to see how this time is used to accomplish these purposes.

In one school, four third-grade teachers meet every Monday at 1:15 p.m. for 45 minutes to discuss their IPI math classes. The principal joins them. If there is a floating teacher and she has a free period, she is also involved. Since time is limited, the group adheres closely to an agenda prepared by the principal, IPI coordinator (if any), or some other member of the group. Two items always appear on the agenda: review of students' progress, and organization and assignments for instruction. Additional items are added as needed from week to week. This week the agenda looks like this.

IPI Planning Session

Williams Elementary School

Grade ____________ Chairman __________________________ Date ____________

....

1. Review of flow charts.
2. Instructional regrouping and teacher assignment.
3. Excessive amount of class time spent by students waiting for teacher's help.
4. Demonstration of some teacher-made math games related to area of Numeration.
5. Next planning session.

Decisions: (what, who, how, when)

Reviewing flow charts is the first item on the agenda. Each class is listed on a flow chart which locates each student in the Continuum at that date:

Williams Elementary School

Teacher ____________________

Grade ____________________

	Student	Date	Date
1.	Anderson, Bob	B-Num.-1	B-PV-Post
2.	Arsen, William	C-PV-3	C-Add-3
3.		.	.
4.		.	.
5.		.	.
6.		.	.
.		.	.
.		.	.
.		.	.
.		.	.
.		.	.
n.		C-Sub-Pre	C-Sub-Post

Much of a teacher's time is spent in examining the individual pupil's record, in diagnosing his needs, and preparing individual lesson plans (developing prescriptions). The teacher's role in preparing for instruction is not one of deciding what he is going to teach and how he is going to present it but is rather that of determining what each pupil needs and arranging for the necessary learning experience.

In addition, the students on the particular grade level are listed on one flow chart used by the principal or floating teacher, (if available). This chart represents the distribution of the students on that grade level in the Continuum by unit skill:

Level	Unit Skill	No. of Students
B	Num - 1	4
	3	2
	PV - 3	2
	.	.
	.	.
	.	.
	Geom-2	1

The information on this chart summarizes the progress of all the students assigned to the instructional team and is used by the principal or floating teacher to help the teachers group students for instruction.

With these charts, the IPI team is able to follow each student as he moves through the Continuum. Further, inconsistencies or undue delays in any student(s)' progress become evident immediately and the student(s) are singled out for additional attention. After this review, the listings are considered for the purposes of assigning students to teachers for IPI instruction for the following week.

At this planning session, the teachers decide all but five students will remain with their own teachers, These teachers will write the prescriptions for the students in their classes. It is decided that the five students will be assigned to one of the teachers for three days. These students are all ready to take either a pre-test or a post-test, and they will need help in reading directions. This teacher will also write their prescriptions during this time. Within the week, each student will be returned to his own class as soon as he is working on a prescription in a new skill.

In arriving at this decision, these teachers followed some general guidelines for assigning students based on individual needs to teachers for IPI classes:

1. If any students are working on the same unit skill, they are sometimes assigned to the same teacher. This is student-assignment based upon skill achievement. In this manner, the teacher to whom they are assigned can concentrate on developing individual prescriptions within a narrower range of the Continuum.

2. If any students are working on similar materials and equipment, they are assigned to the same teacher who will guide and supervise them as each carries out his individual prescriptions.
3. If any student has a particular emotional need or some personal-social characteristic that is best served by assignment to a particular teacher or with a particular peer group, he is so assigned if possible.
4. If any student requires a great deal of special help in some behavior(s) related to working in IPI math (such as reading directions, working independently, study skills, etc.), he is assigned to a teacher particularly skilled in handling this area and to a group small enough to permit direct teacher guidance of the individual.

The next item on the agenda (the amount of time that students spend waiting for teacher-help, sometimes referred to as "down-time") was placed there at the request of one teacher who finds herself swamped by requests from students for help during class time. The teacher describes the situation in her class to the others in the IPI team. As they discuss the problem, the teacher realizes she has encouraged this dependency by the kind of prescriptions she has been writing and by the information-giving role she has been using. The discussion results in three concrete suggestions:

1. Vary Instructional Techniques in prescriptions; use #2, 6, 10, and 11 in particular.

2. Inform students that they are to signal for teacher-help only after they've made every attempt to work out the problem themselves.

3. Use guiding questions and provide cues related to the student's problem instead of giving the final answer.

There are other suggestions, but the teacher selects these three to be tried next week. The suggestions are recorded on the agenda under Decisions.

For the demonstration of math games, the teacher who made them, distributes the games to the others. They manipulate and play with the games, and discuss their use in relation to specific unit skills in Numeration. The games are given a code number to correspond to the unit skills they teach.

Then, topics for the agenda of the next planning session are listed. Review of flow charts and student assignments are automatically listed. The principal asks that they include a discussion about needed revisions of IPI worksheets. The rest of the agenda is left open for addition of topics as the week goes on. It is decided that the principal will chair the next planning session and will complete the agenda for the group.

8

THE FOLLOWING MATERIALS OFFER A FRAMEWORK FOR DEVELOPING A MODEL OF A PLANNING SESSION FOR YOUR SCHOOL. USE THEM TO HELP YOURSELF STRUCTURE YOUR FIRST PLANNING SESSIONS. CONTINUE USING THEM TO CHECK THE DEVELOPMENT OF PLANNING SESSIONS.

1. Read the following:
    a. Some Organizational Details of IPI Planning Sessions
    b. Basic Requirements for a Planning Session
    c. Suggested Ground Rules for a Planning Session
    d. General Guidelines for Assigning Students to Instructional Groups in IPI

2. Arrange to meet with people who will be on the same instructional team.
    a. Schedule a meeting to be held some time during this session for their team, and to announce the names of the team members.
    b. Ask the team members to prepare for this meeting by reading this section.
3. Meet with the instructional teams as scheduled.
    a. Select a temporary chairman.
    b. Review the materials you have read.
    c. Revise, delete and add to them to make them fit the needs of the children in your school.

4. Record this information and arrange to have a copy given to each team member.
5. If time permits, start an agenda for the next meeting.
6. Designate the chairman for the next meeting and set a time.
7. Adjourn and continue other work in progress.

Some Organizational Details of IPI Planning Sessions

Time: Usually 45-60 minutes scheduled once a week.

IPI Instructional Team (usually about 4-6 professionals - however the number varies from school to school.)

Classroom teachers of one grade level or adjecent grade levels who teach IPI Math at the same time.

Building Principal

Floating teacher* (A teacher assigned to work with this team for a specified amount of time during the week. Usually this teacher is not responsible for a register.)

IPI Coordinator* (A supervisor, assistant principal, etc. assigned the overall program responsibility of IPI in the school.)

*These are optional positions in an IPI school. Such considerations as budget, pupil-teacher ratio, administrator's workload, etc. are used to decide whether or not these positions should be created.

Subject Area

Mathematics

Basic Requirements for a Planning Session

Agenda:

1. Completed by chairman and in the hands of the IPI team before the meeting.

2. Indicates grade, date, chairman, topics, and a space for decisions.

Flow Charts:

1. Lists students by class and indicate the unit skill placement for each.
2. Distribution of students on a grade level by unit skill.

Teacher Participation:

1. Provides specific descriptive data about IPI students and IPI classes.
2. Cooperates in assigning students to teachers for the week.
3. Identifies and contributes to resolving IPI instructional problems.
4. Accepts and implements decisions of IPI team.
5. Acts as chairman of IPI team as needed.
6. Reports and suggest procedures for smoother operation of IPI.
7. Confines discussion to the topics of the session as stated in the agenda.

*Principal's Participation (if possible):

1. Preparation for planning session:
    a. Observes and teaches in IPI classes.
    b. Keeps a record of the operation of the program, e.g. materials, aides, teacher-student relations, etc.
    c. Reviews prescriptions or a sampling of prescriptions for such things as length, accuracy, variations, etc.
    d. Reviews flow charts.
    e. Checks that all arrangements for the planning sessions have been made.

* Refers to IPI coordinators too.

2. Participates in the planning session (see: Teacher participation) and makes a contribution of unique data as principal of the school.

3. Provides administrative support for all planning sessions, and implements decisions made at planning sessions.

4. Maintains overall responsibility for planning sessions:

    a. Guides continuity of sessions.

    b. Indentifies needs for a variety of inservice training experiences.

    c. Establishes and reinforces basic ground rules for planning sessions.

    d. Assists ad hoc chairman of planning session.

5. Provides planning time.

Suggested Ground Rules for a Planning Session

1. Stick to the agenda.

2. Offer an alternate procedure or a tentative solution (no matter how good or bad) with every criticism or problem that is stated.

3. Work toward a consensus or general agreement on decisions made.

4. Live by the decisions made at the planning sessions.

5. Participate in the instructional decision-making for all the students assigned to the teachers in the IPI team.

6.

ADD YOUR SUGGESTIONS TO THIS LIST.

DISCUSS THE LIST WITH THE OTHERS ON YOUR INSTRUCTIONAL TEAM.

DECIDE UPON WHICH ONES YOU WILL USE IN YOUR PLANNING SESSIONS.

THE FOLLOWING SAMPLE CHARTS ARE USED BY IPI TEACHERS IN PLANNING SESSIONS

PLANNING NOTES

MATH

Grade Level ____________________ Date ____________________

A. Flowcharts Show These Groupings:

Level A ______________________________ E ______________________________

B ______________________________ F ______________________________

C ______________________________ G ______________________________

D ______________________________ H ______________________________

B. Points Discussed:

1. ____
____
2. ____
____
3. ____
____
4. ____
____
5. ____
____

C. Decisions Reached:

1. ____
____
2. ____
____
3. ____
____
4. ____
____
5. ____
____

D. Seminar Topics For This Week:

Room ______ ____
Room ______ ____

E. Materials Needed:

____
____
____
____

WASHINGTON ELEMENTARY
TRENTON, NEW JERSEY

Seminar Topics for the Week:

Grades		
1	A-19 A-20	
2	A-6 A-22	
3	A-7 B-9	
4	B-7 B-8	
5	B-14 B-15	
6	B-2 B-13	

FLOW CHARTS

LEVEL			
NUMERATION			
PLACE VALUE			
ADDITION			
SUBTRACTION			
MULTIPLICATION			
DIVISION			
COMB. OF PRO.			
FRACTIONS			
MONEY			
TIME			
SYSTEMS OF MEAS.			
GEOMETRY			
SPECIAL TOPICS			

RICHLAND SCHOOL
QUAKERTOWN, PENNSYLVANIA

IPI FLOWCHART

NAME	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	

NORTH SCHOOL
Wilkes Barre, Pa.

WASHINGTON ELEMENTARY SCHOOL Trenton, N. J.

NUMBER OF STUDENTS IN STAGES OF IPI MATH PROGRAM

Date ____________________

GRADES		A	B	C	D	E	F	G	H
1	A-19								
	A-20								
2	A-6								
	A-22								
3	A-7								
	B-9								
4	B-7								
	B-8								
5	B-14								
	B-15								
6	B-2								
	B-13								
TOTAL									

	Wright								
	A	B	C	D	E	F	G	H	I
Num.	3	15	1						
P. V.		2							
A-S.		2							
Add.									
Sub.									
Mult.									
Div.									
Cop									
Frac.	1								
Time									
Money									
Som.									
Geo.									
Sp.T.									

	Overall								
	A	B	C	D	E	F	G	H	I
Num.	3	53	3						
P. V.		10	1						
A-S.		19							
Add.									
Sub.									
Mult.									
Div.									
Cop									
Frac.	2								
Time									
Money		1							
Som.		1	1						
Geo.									
Sp.T.									

	A	B	C	D	E	F	G	H	I
Num.									
P. V.									
A-S.									
Add.									
Sub.									
Mult.									
Div.									
Cop									
Frac.									
Time									
Money									
Som.									
Geo.									
Sp.T.									

WEST ELEMENTARY SCHOOL

Dover, Delaware

DIRECTIONS FOR GUIDING STUDENTS THROUGH THE CONTINUUM

If there are students available to you, you will be able to guide them through the Math Continuum. It is suggested that you also complete the simulated case studies as directed.

In order to take students through the Continuum you will need a full set of IPI materials (student and teacher editions). You may act as teacher and aide or rotate these roles with the other teachers working through these materials.

Use the Guidelines contained in Teaching in IPI to place the students in the Continuum and to develop prescriptions for them.

If time permits, continue working through the Continuum yourself.

ED0 30584

TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 4

Developing a Prescription

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

SP002419

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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DEVELOPING A PRESCRIPTION

CASE STUDY - TYPE 1

JOE BOWEN

C-FRAC.

CASE STUDY I

This volume focuses on Joe Bowen, a student from a third grade class working in C-Fractions. With the other participants in your group led by your trainer, you are to proceed through the following material. This case study was prepared to give you the opportunity to see one child's complete work for a particular unit. It is also to give you an opportunity to ask questions and discuss with the trainer and other participants any decisions or prescriptions which do not seem valid to you. Remember, this is only one teacher's method of handling this particular case.

This is Joe's Placement Profile. He has worked through units: B-Numeration, B-Place Value, B-Fractions, C-Numeration, C-Place Value, C-Addition and C-Subtraction.

Examine the Profile and note the order of unit assignment.

Joe's next unit of work will be C-FRACTIONS.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Joe Bowen STUDENT NUMBER 0976

SCHOOL STAMP ______ GRADE 3 ROOM 107

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)	9/30	MAX. PTS.	10	10						B
		SCORE	6	2						
		%	60	20						
PLACE VALUE (02)		MAX. PTS.	10	10						B
		SCORE	6	1						
		%	60	10						
ADDITION (03)		MAX. PTS.	▨	10						C
		SCORE	▨	7						
		%	▨	70						
SUBTRACTION (04)		MAX. PTS.	▨	10						C
		SCORE	▨	6						
		%	▨	60						
ADDITION/ SUBTRACTION (34)		MAX. PTS.	10	▨	▨	▨	▨	▨		H
		SCORE	10	▨	▨	▨	▨	▨		
		%	100	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨							D
		SCORE	▨							
		%	▨							
DIVISION (06)		MAX. PTS.	▨							D
		SCORE	▨							
		%	▨							
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		H
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	10	10					D
		SCORE	▨	8	3					
		%	▨	80	30					
FRACTIONS (08)		MAX. PTS.	10	10						B
		SCORE	5	1						
		%	50	10						
MONEY (09)		MAX. PTS.		10				▨	▨	C
		SCORE		4				▨	▨	
		%		40				▨	▨	
TIME (10)		MAX. PTS.		10	10					D
		SCORE		9	3					
		%		90	30					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		10					▨	C
		SCORE		5					▨	
		%		50					▨	
GEOMETRY (12)		MAX. PTS.		10						C
		SCORE		3						
		%		30						

Since Joe's next unit of work is C-FRACTIONS, examine his work on the Placement Test in C-Fractions. It is one Page 5.

The procedures for writing Joe's prescriptions in this unit are outlined for you in this case study. Follow them carefully. There will be several points at which you can review these procedures before Joe completes this unit.

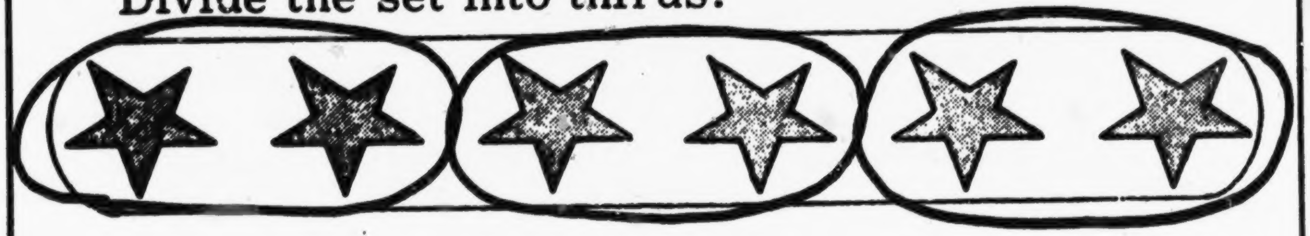
IPI MATHEMATICS PLACEMENT TEST

Level C
Fractions (08)

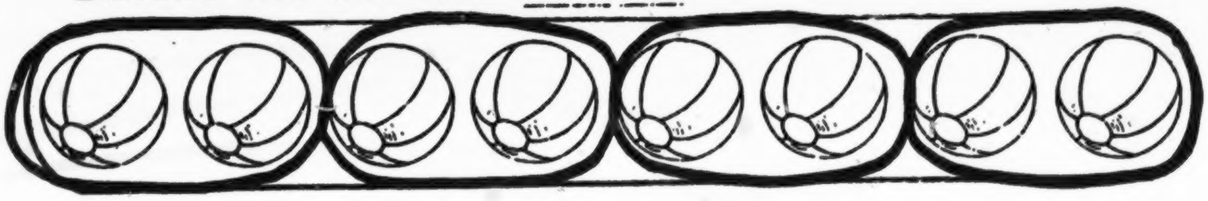
Name Joe Bowen
Class 3
Date
Number 0976

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

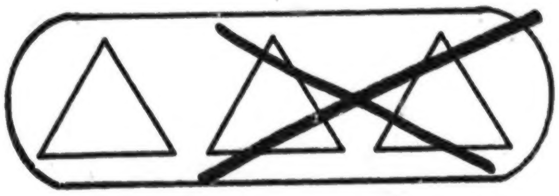
Divide the set into thirds.



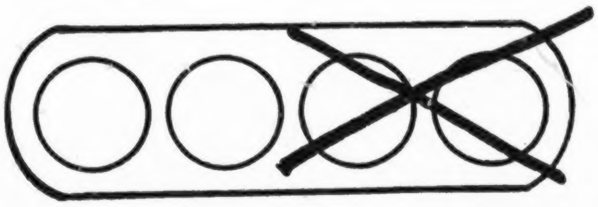
Divide the set into fourths.



Ring $\frac{1}{3}$ of the set.



Ring $\frac{1}{4}$ of the set.



C FRAC (08)

You assign the C-Fractions Pre-test by writing C-Frac. in the unit space at the top of the Prescription Sheet and by writing Pre-test on the Prescription Sheet.

Joe will get his Pre-test and complete it. He will give the completed Pre-test to the Aide for scoring.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0876

SCHOOL STAMP

GRADE 3 ROOM UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
DATES									

P1 – 1968

This is a copy of Joe's Pretest that has been scored by the Aide.

ipi MATHEMATICS PRE-TEST

Name Joe Bowen
Date
Class 3
Number 0976

LEVEL C, FRACTIONS (08)

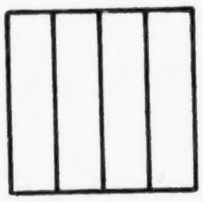
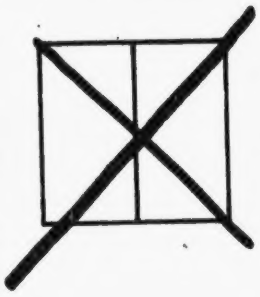
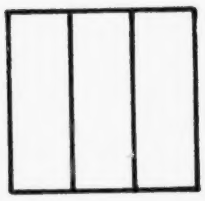
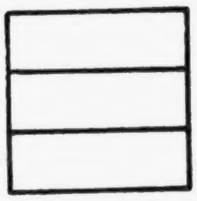
SKILL 1

TL. PTS.	
4	100%
NO. OF PTS.	%
[✓ 3]	75
2	50
1	25

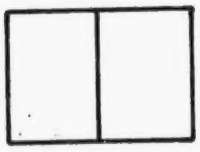
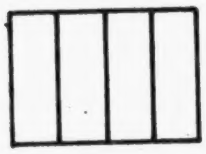
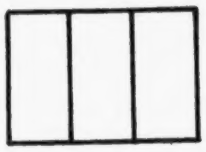
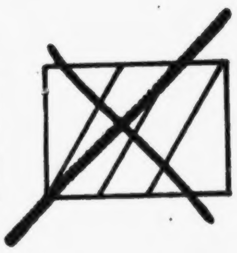
Fractions: Directs the student to divide sets, or to indicate sets and objects that are divided, into halves, thirds, and fourths; and to identify the fractions $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$.

Mark the figure that is divided into

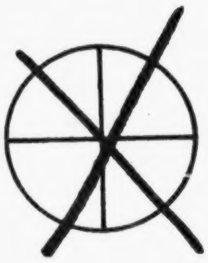
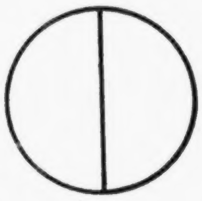
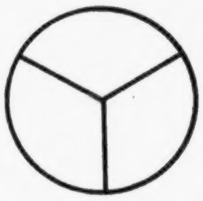
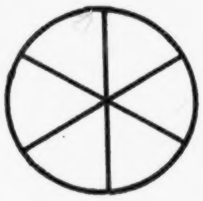
halves

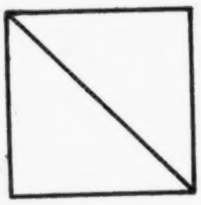
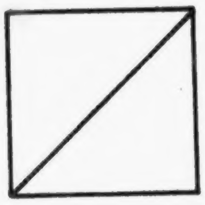
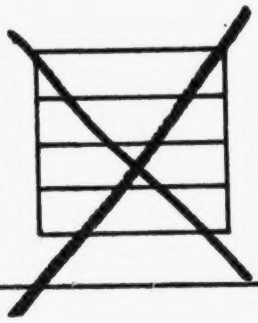
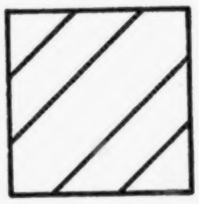
thirds

fourths

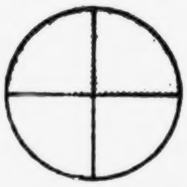
fourths

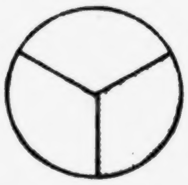





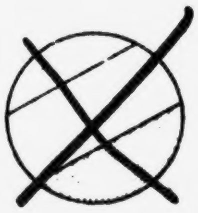
[illegible]	
7	100
NO. OF PTS.	
6	86
5	71
[✓ 4]	[✓ 57]
3	43
2	29
1	14

In each row, mark the shaded part that matches the fraction.

$\frac{1}{3}$

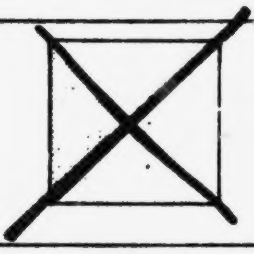


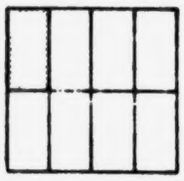


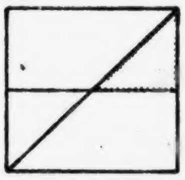


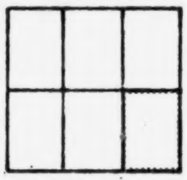
X

$\frac{1}{4}$

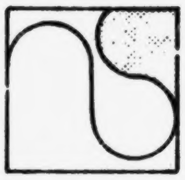


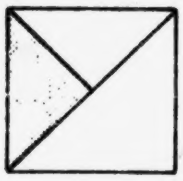


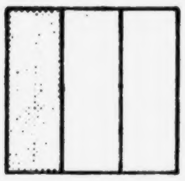


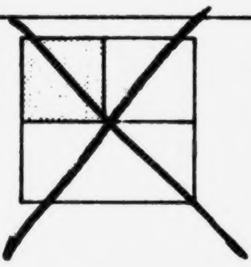


$\frac{1}{3}$







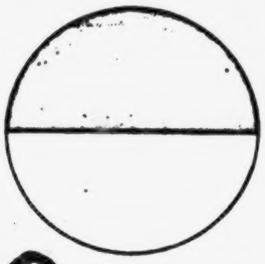


X

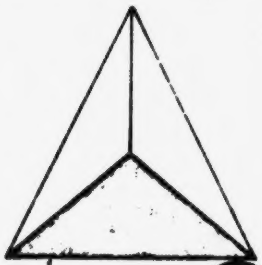
Fill in the blank.

One-third means 1 of 3 equal parts.

In each box, ring the fraction that matches the shaded part.

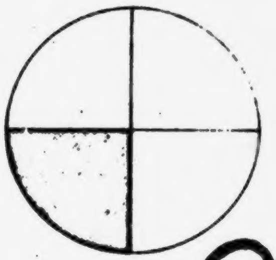


[✓ $\frac{1}{2}$] $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]

✓



$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]

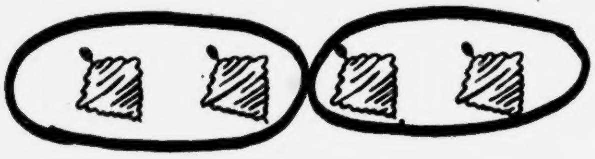
C FRACTIONS (08) PRE-TEST

SKILL 3

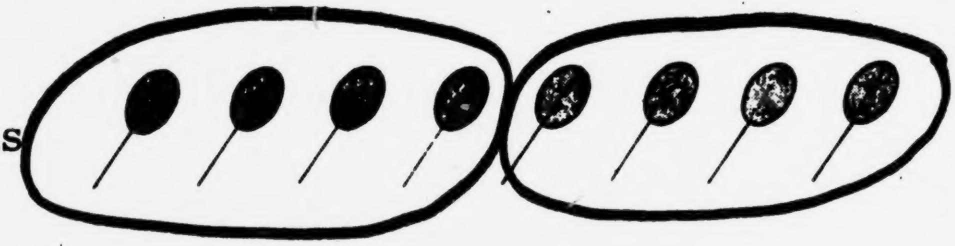
TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
[✓ 2]	[✓ 40]
1	20

Ring the objects in order to divide the row into

halves

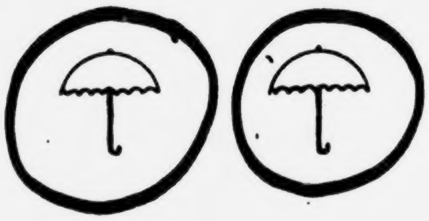


fourths

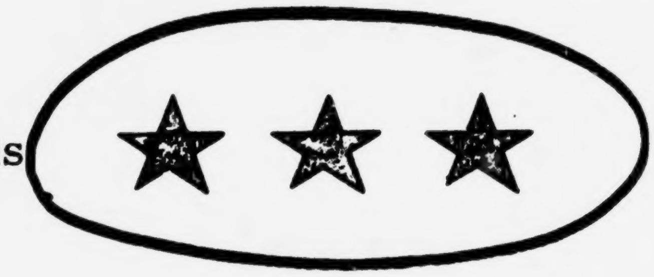


X

halves

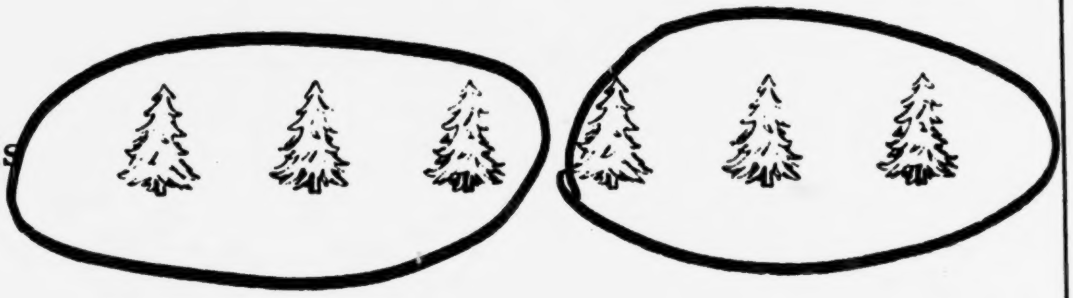


thirds



X

thirds



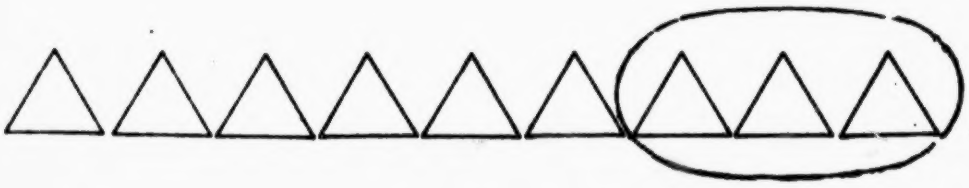
X

C FRACTIONS (08) PRE-TEST

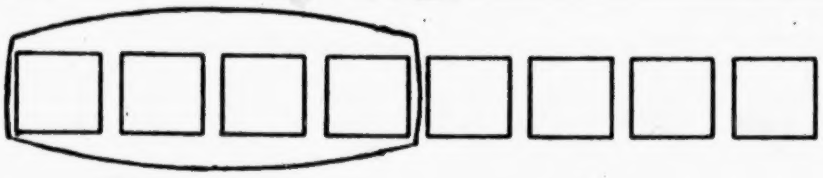
SKILL 4

TL PTS.	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

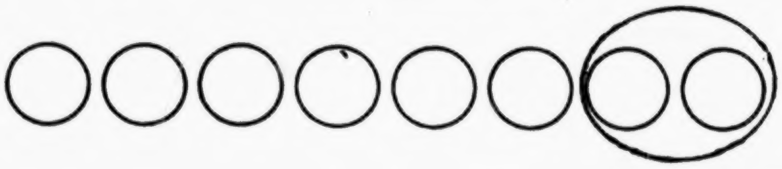
In each row, mark the fraction that tells what part of the row is circled.



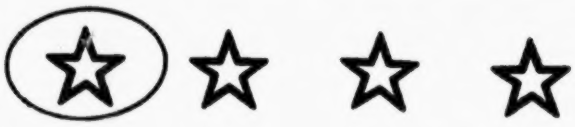
$\frac{1}{2}$ [✓ $\frac{1}{3}$] $\frac{1}{4}$



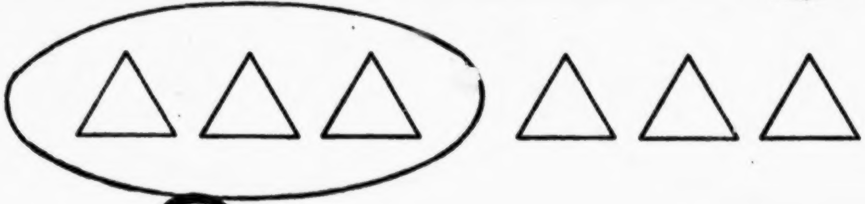
[✓ $\frac{1}{2}$] $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]



$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]



[✓ $\frac{1}{2}$] $\frac{1}{3}$ $\frac{1}{4}$

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP
GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									

This is a copy of Joe's Prescription Sheet which the Aide fills out and returns with the Pre-test to the teacher. The Pre-test scores of each skill in the unit appear in the bottom right hand corner.

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	3	75						
2	7	4	57						
3	5	2	40						
4	5	5	100						
DATES		2-1							

P1 – 1968

You examine the Pre-test. On your Prescription Sheet, you circle the skills in C-FRAC, that are below 85% and require a prescription.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen STUDENT NUMBER 0976

SCHOOL STAMP ______________

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
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02	Peer Tutor
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07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
	DATES	2-1							

After you examine the entire Pre-test and you make a general statement about Joe's performance on the entire test.

Joe can: Identify figures divided into fourths and halves; circle sets to show equal fractional parts; match shaded figures and printed fractions.

Joe cannot: Identify figures divided into thirds; match shaded figures and circle sets to show 1/3.

You analyze Joe's behavior:

a. You describe behaviors which will facilitate learning: Joe reads well and can interpret written directions; he can work independently.

   You state how your prescription will take these behaviors into account:

   Peer tutoring and independent study will be prescribed.

b. You describe behaviors which will hamper learning: Joe plays with manipulative devices.

   You state how your prescription will take these behaviors into account:

   Purposes of using manipulative aids will be explained to Joe and supervision will accompany a prescription for aids.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						

You select the first skill requiring a prescription. This is Skill 1.

You record the date, your initials, Skill #1 and Read Student Page on the Prescription Sheet

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
	DATES	2-1							

P1 – 1968

You analyze Joe's work on Pre-test Skill 1:

Joe can: Identify a figure that is divided into 1/2's and 1/4's.

Joe cannot: Identify a figure that is divided into 1/3's when unusual divisions are presented.

You describe what Joe must learn for Skill 1: Divide objects into 1/3's and identify objects that have been divided into 1/3's.

This is a copy of the STS Booklet for Skill 1.

You examine all the skill sheets and STS sheets (pp. 20-21) in the booklet to become familiar with materials for this skill.

Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 1, in particular), you decide to prescribe the following on 2/2:

Page	Reason
Student Page	Introduces skill; previews work
4	Introduce concept of 1/3
5	Dividing objects into 1/3's
6	Identifying objects divided into 1/3's
Fraction Pies	
12	Manipulating objects divided into thirds with help of and supervision by Mark S.
Mark S. 02	

After you recheck these three pages, you record the page numbers and the date on Joe's Prescription Sheet.

ipi
MATHEMATICS

Name ______________________ Date ____________________

Class ______________________ Number __________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff
LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

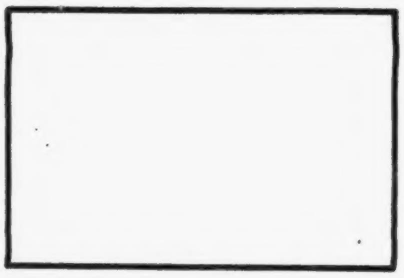
the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

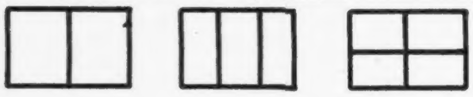
LEVEL C, FRACTIONS (08), SKILL 1

TO THE STUDENT

Divide the first box into halves, the second box into thirds and the last box into fourths.

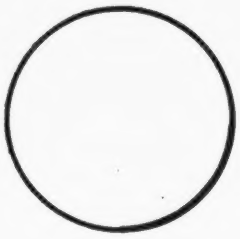


Answers



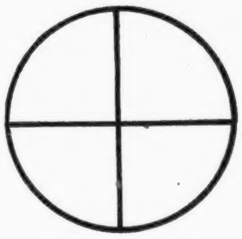
Page 1

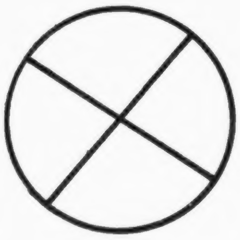
Fill in the blanks.



This is a circle.

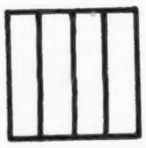
This circle is divided into
__4__ equal parts.





This circle is divided into how many
equal parts? ______

When an object is divided into 4 equal parts, we say the object is divided into fourths.



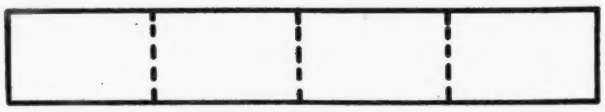
This box is divided into how many
equal parts? ______

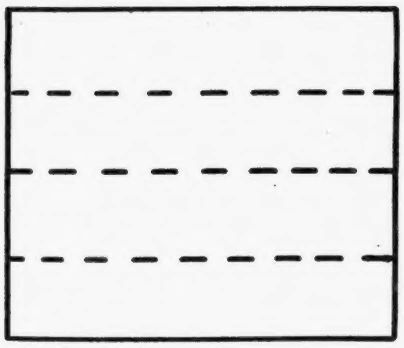
TOTAL POINTS	NUMBER CORRECT
3	

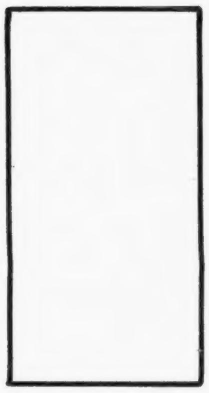
LEVEL	UNIT	SKILL	PAGE
C	08	1	1

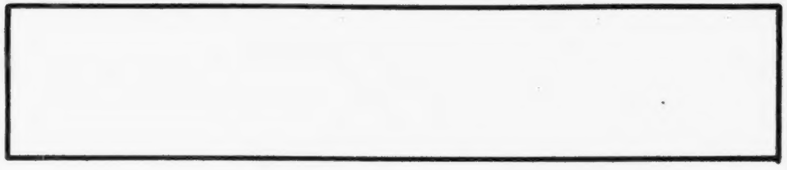
When an object is divided into 4 equal parts, it is divided into fourths.

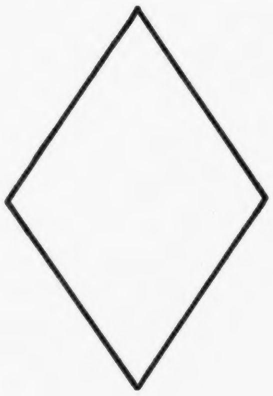
Divide the objects below into fourths.











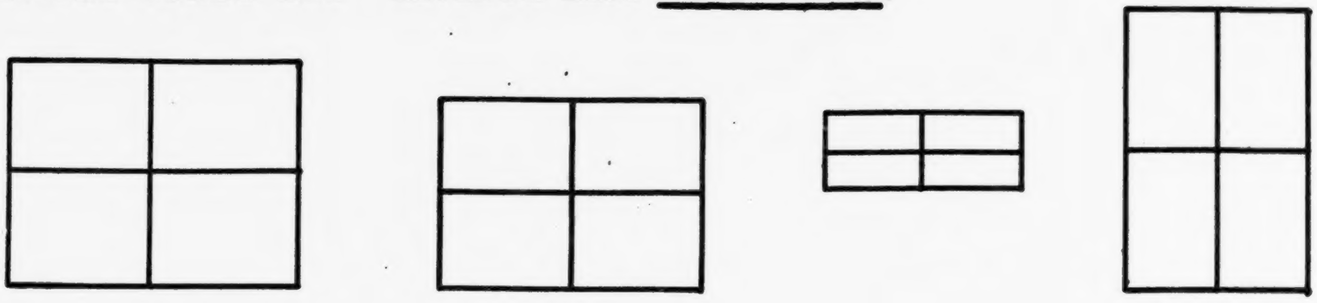
All these objects are now divided into equal parts.

They are divided into __________.

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
C	08	1	2

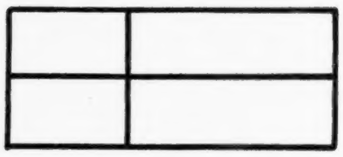
These boxes are divided into _________.



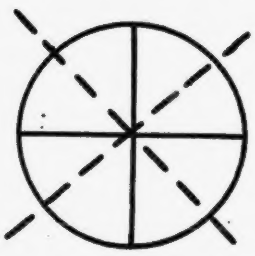
This box is not divided into fourths. Why not?

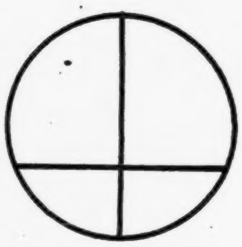
____

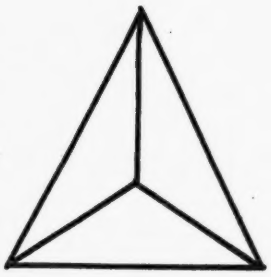
____

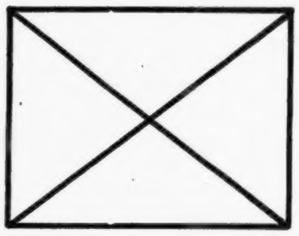


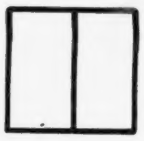
Put an X on the figures that are divided into fourths.

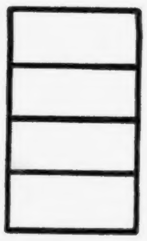


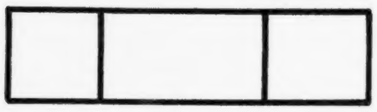


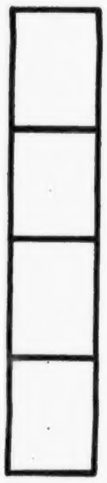


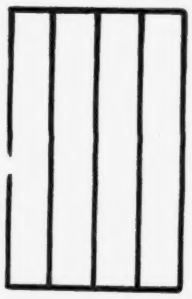


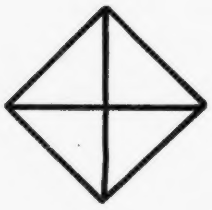










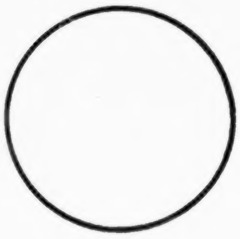


Practice, 11.

TOTAL POINTS	NUMBER CORRECT
12	

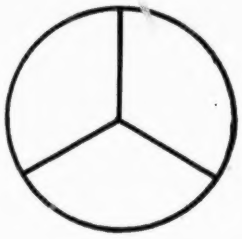
LEVEL	UNIT	SKILL	PAGE
C	08	1	3

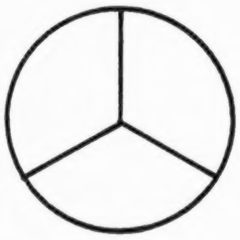
Fill in the blanks.



This is a circle.

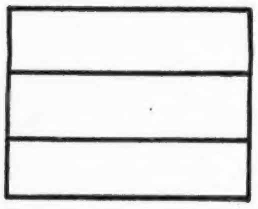
This circle is divided into
3 equal parts.





How many equal parts is this circle
divided into? _____

When an object is divided into 3 equal parts, we say the object is divided into thirds.



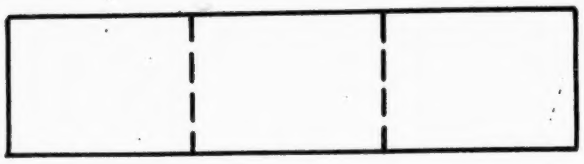
This box is divided into _______ equal parts.
It is divided into t_______.

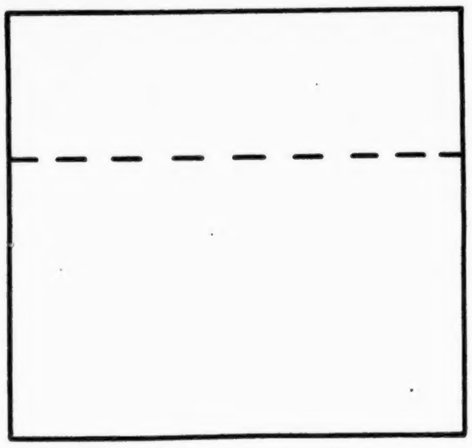
TOTAL POINTS	NUMBER CORRECT
4	

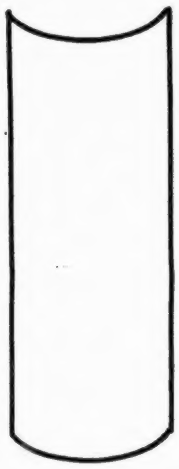
LEVEL	UNIT	SKILL	PAGE
C	08	1	4

When an object is divided into 3 equal parts, it is divided into thirds.

Divide the objects below into thirds.





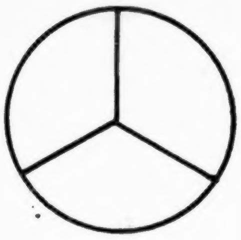


All these objects are now divided into equal parts.

They are divided into _________.

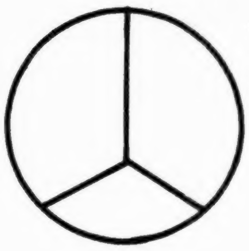
TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
C	08	1	5



This circle is divided into ________.

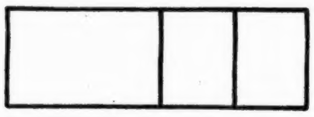
This circle is not divided into thirds. Why not?

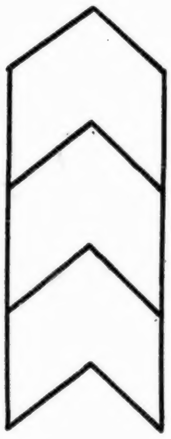


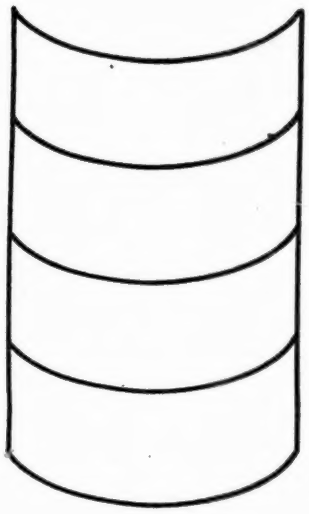
____

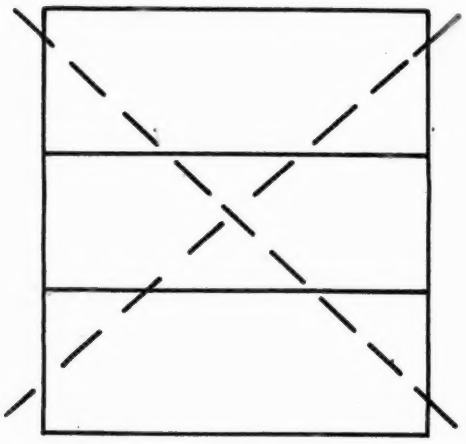
____

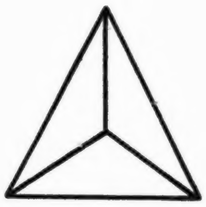
Put an X on the figures that are divided into thirds.

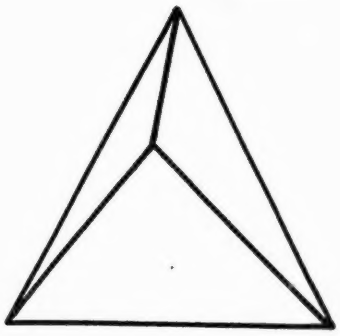


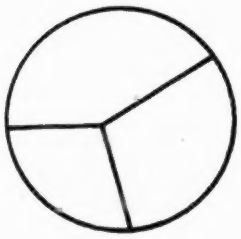


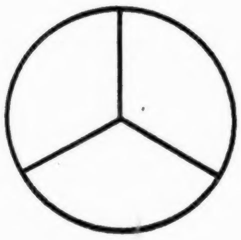












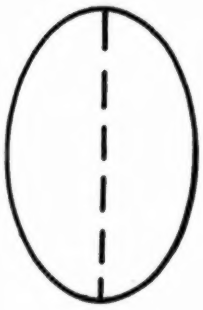
TOTAL POINTS	NUMBER CORRECT
10	

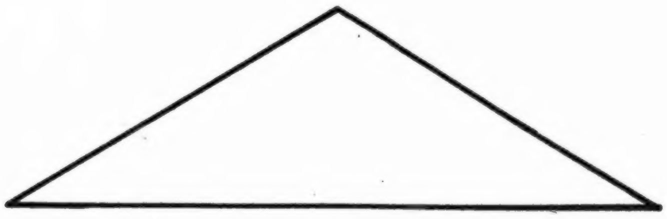
LEVEL	UNIT	SKILL	PAGE
C	08	1	6

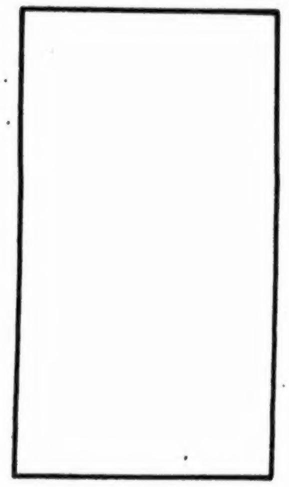
Page 7

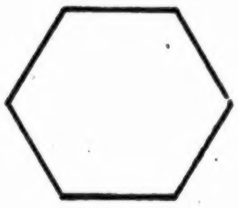
When an object is divided into 2 equal parts, we say it is divided into halves.

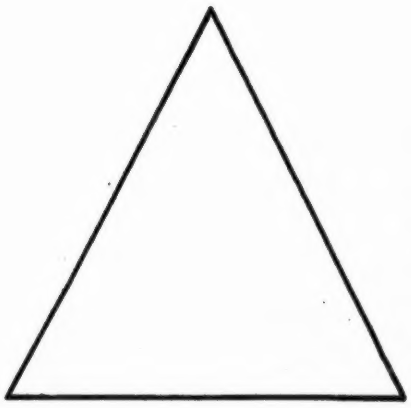
Divide these objects into halves.

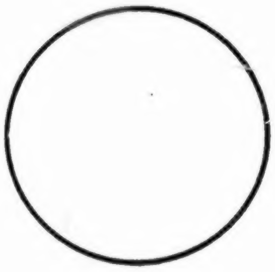


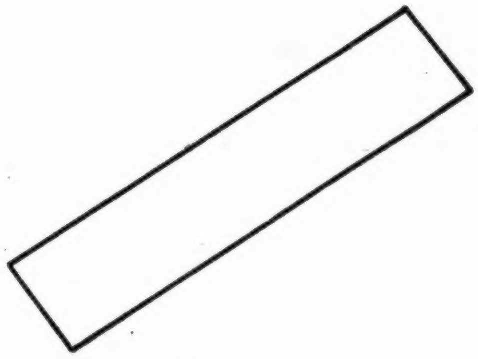












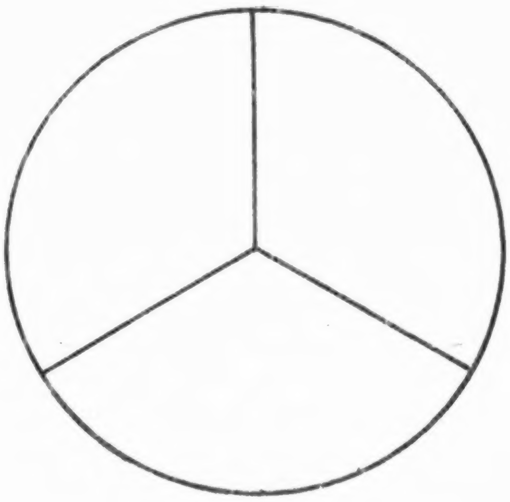
All these objects are now divided into h__________

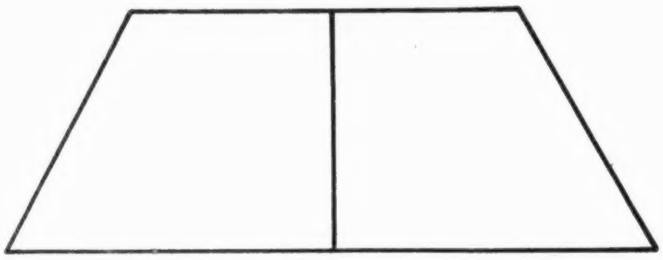
TOTAL POINTS	NUMBER CORRECT
8	

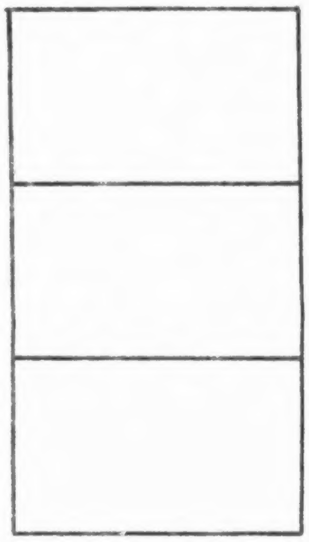
LEVEL	UNIT	SKILL	PAGE
C	08	1	7

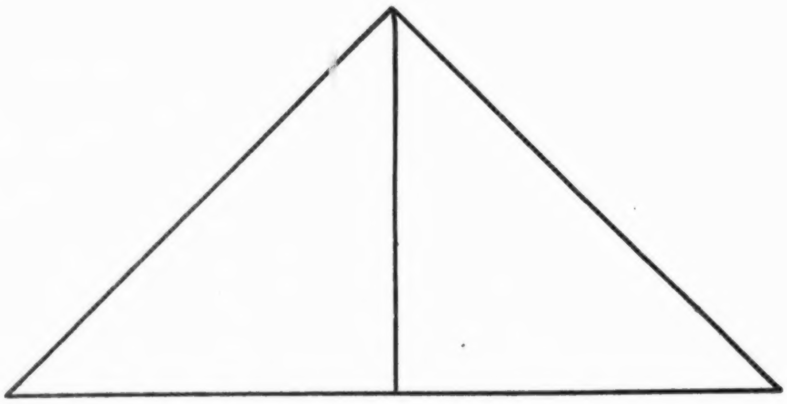
Page 8

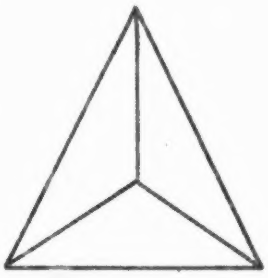
Ring the objects which are divided into halves.

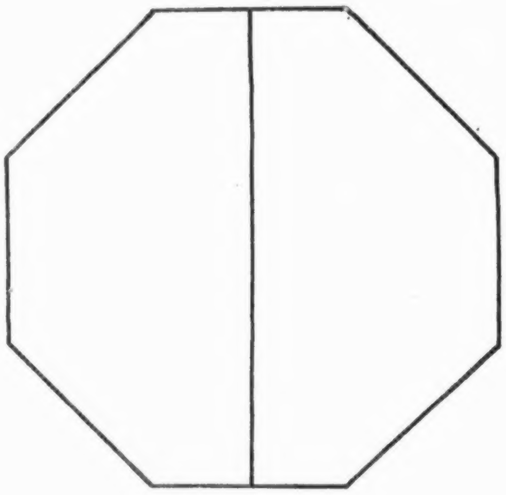


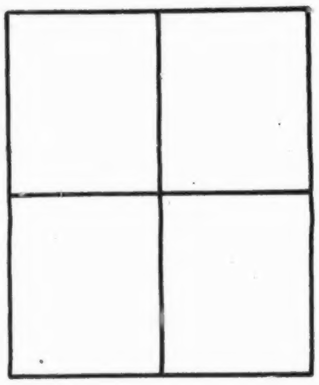












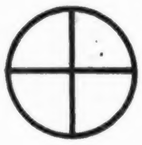
TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
C	08	1	8

Page 9

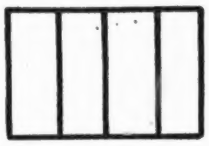
How is the picture divided?

Ring the answer.



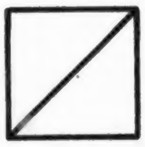
is divided into

thirds halves [✓ fourths]



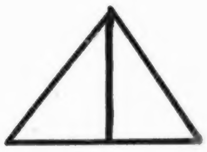
is divided into

fourths thirds halves



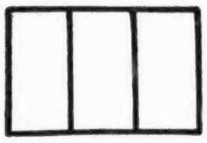
is divided into

halves thirds fourths



is divided into

halves thirds fourths



is divided into

fourths thirds halves

Practice, 12.

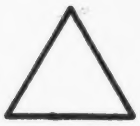
TOTAL POINTS	NUMBER CORRECT
5	

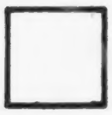
LEVEL	UNIT	SKILL	PAGE
C	08	1	9

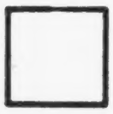
CET I

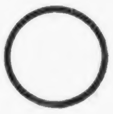
TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

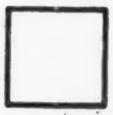
Divide the figures into the parts named.


halves


thirds

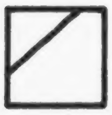
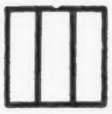
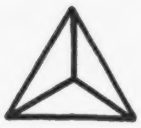
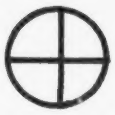

fourths


fourths

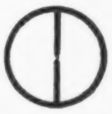
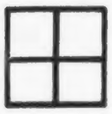
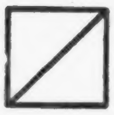
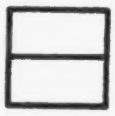

halves

Mark each figure in the row that matches the word.

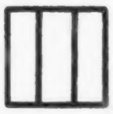
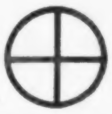
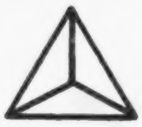
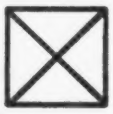
thirds

halves

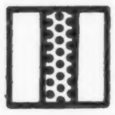





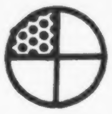
fourths

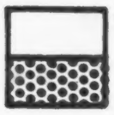





Ring the fraction.

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33


$\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$

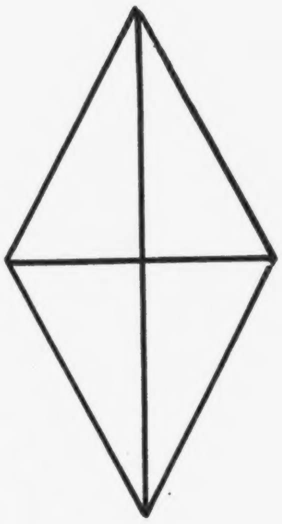

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$

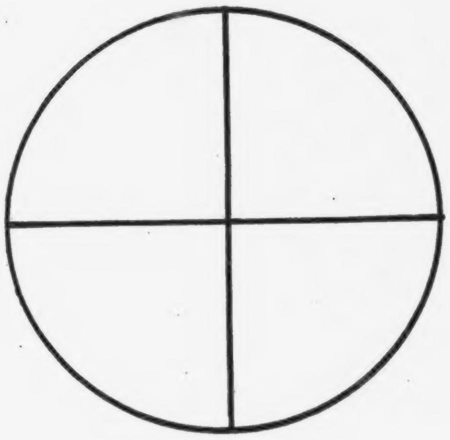

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$

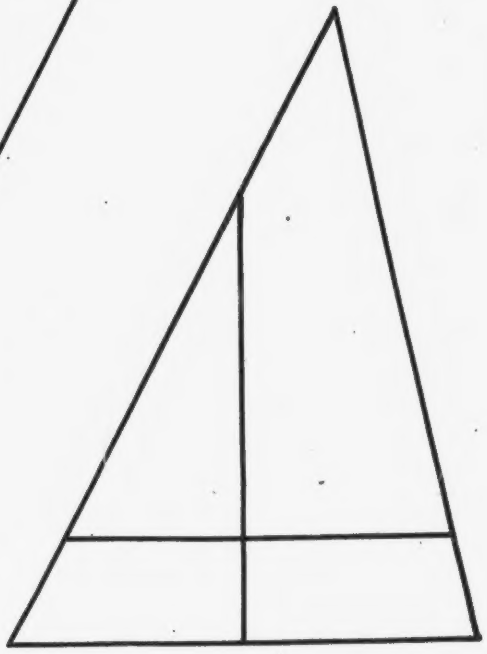
LEVEL	UNIT	SKILL	PAGE
C	08	1	10

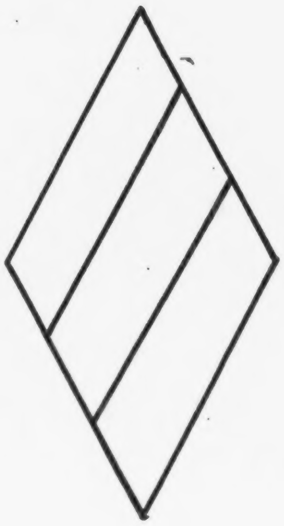
Page 11

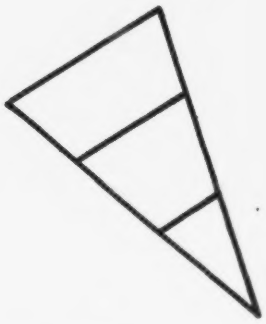
Ring all the objects that are divided into fourths.

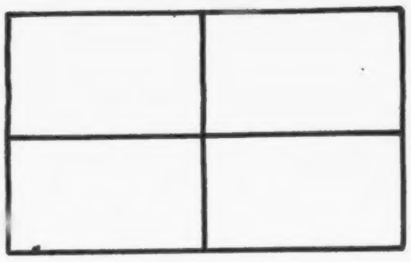


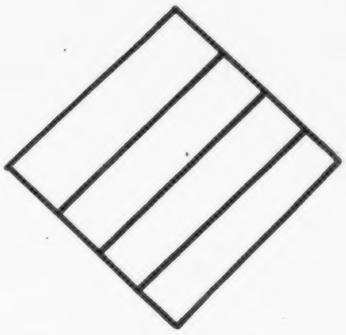








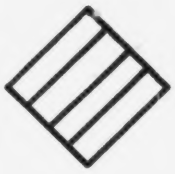




TOTAL POINTS	NUMBER CORRECT
7	

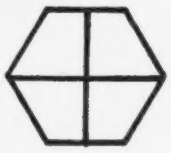
LEVEL	UNIT	SKILL	PAGE
C	08	1	11

Ring the word which tells how the object is divided.

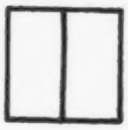


is divided into

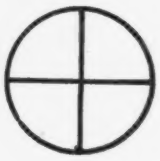
halves
thirds
[✓ fourths]



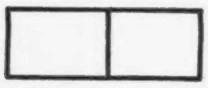
halves
thirds
fourths



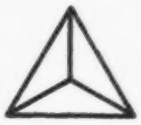
halves
thirds
fourths



halves
thirds
fourths



halves
thirds
fourths



halves
thirds
fourths

TOTAL POINTS	NUMBER CORRECT
6	

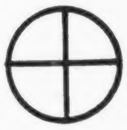
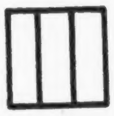
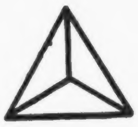
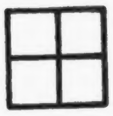
LEVEL	UNIT	SKILL	PAGE
C	08	1	12

CET II

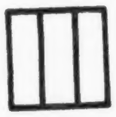
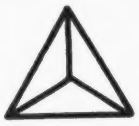
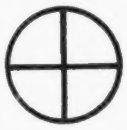
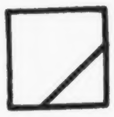
TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

Mark each figure in the row that matches the word.

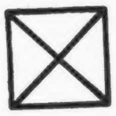
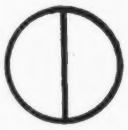
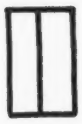
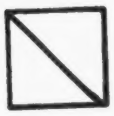
fourths

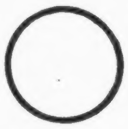
thirds

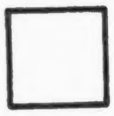





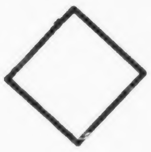
halves

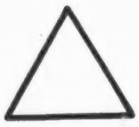





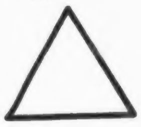
Divide the figure into the parts named.


thirds


halves

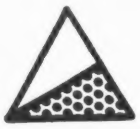

fourths

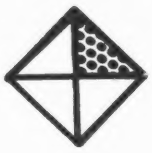

halves

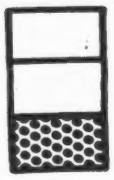

thirds

Ring the fraction.

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33


$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$


$\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$


$\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$

LEVEL	UNIT	SKILL	PAGE
C	08	1	13

LEVEL C, FRACTIONS, SKILL 1

OBJECTIVE: Divides a whole object into halves, thirds, or fourths, or identifies an object divided into halves, thirds, or fourths.

STANDARD TEACHING SEQUENCE

Pages		Supplementary Material
1.	Says that an object is divided into 4 equal parts or into fourths.	
2.	Divides objects into fourths.	
3.	Puts an X on figures that are divided into fourths, rejecting all figures not divided into 4 equal parts.	11
4.	Says that an object is divided into 3 equal parts or into thirds.	
5.	Divides objects into thirds.	
6.	Puts an X on figures that are divided into thirds, rejecting all figures not divided into 3 equal parts.	
7.	Divides objects into halves.	
8.	Circles the objects which are divided into halves.	
9.	Circles the word which tells whether a given object is divided into halves, thirds, or fourths.	12
10.	CET I.	
	CET II.	13

Teaching Aids:

Fraction pies
Fraction wheel (Ideal)
Flannel board (Instructo)
Fractional parts: squares, circles
Teacher's fraction kit, flannel board
Fractions Made Easy (Ideal)
Simple Fractions Kit (Creative Playthings)
Fraction parts on a board (M. Bradley)

Circle pages that are to be done.

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C.	1	4								
			5								
			6								
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

These are the three skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Write about the concept of 1/3's.
Identify objects divided into 1/3's when unusual shapes are presented.

You describe how Joe worked with this prescription: He benefited from the peer tutoring and worked well independently, too.

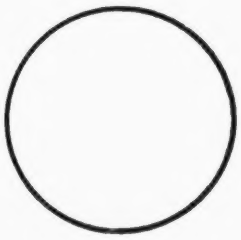
Based on your analysis of Joe's work, you decide to:

_____ Revise original prescription
_____ Extend prescription
__X__ Assign a CET

Why? Joe has learned to divide whole objects into thirds.

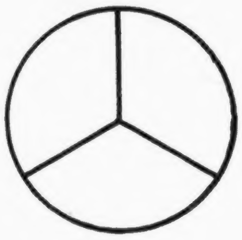
Page 4

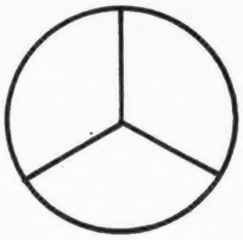
Fill in the blanks.



This is a circle.

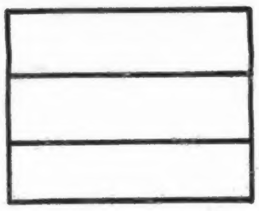
This circle is divided into
3 equal parts.





How many equal parts is this circle
divided into? 3

When an object is divided into 3 equal parts, we say the object is divided into thirds.



This box is divided into 3 equal parts.

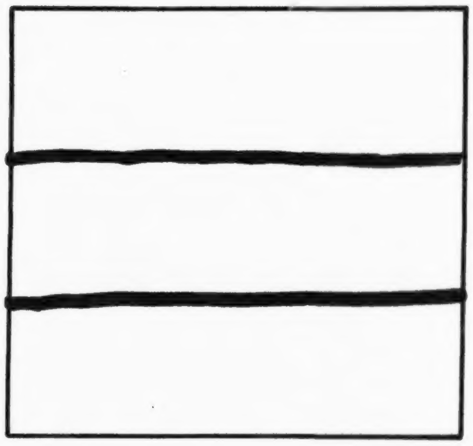
It is divided into thirds.

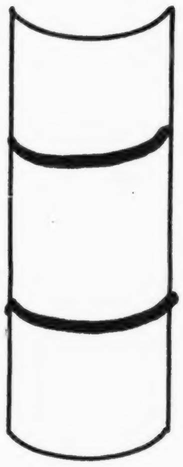
TOTAL POINTS	NUMBER CORRECT
4	4

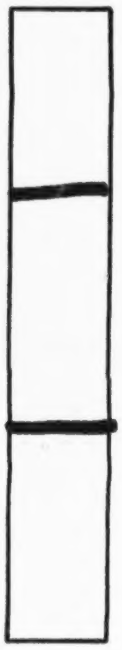
LEVEL	UNIT	SKILL	PAGE
C	08	1	4

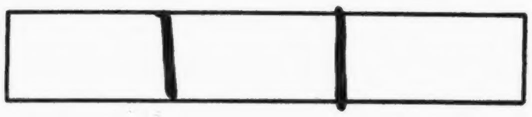
When an object is divided into 3 equal parts, it is divided into thirds.

Divide the objects below into thirds.









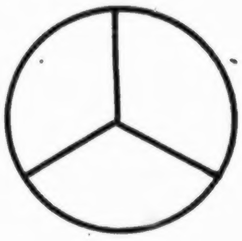
All these objects are now divided into equal parts.

They are divided into thirds.

TOTAL POINTS	NUMBER CORRECT
6	6

LEVEL	UNIT	SKILL	PAGE
C	08	1	5

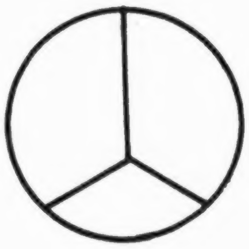
Page 6



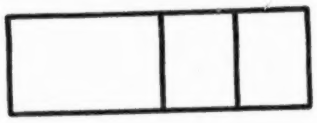
This circle is divided into thirds.

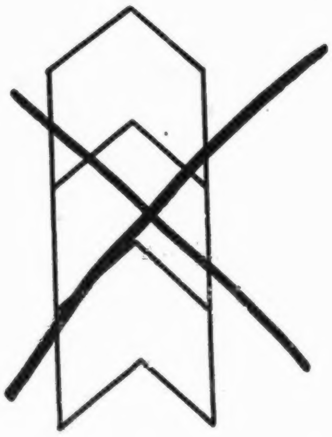
This circle is not divided into thirds. Why not?

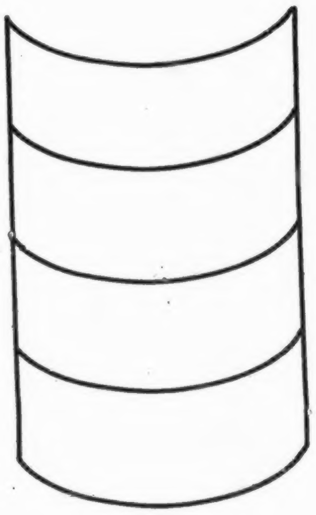
unequal parts

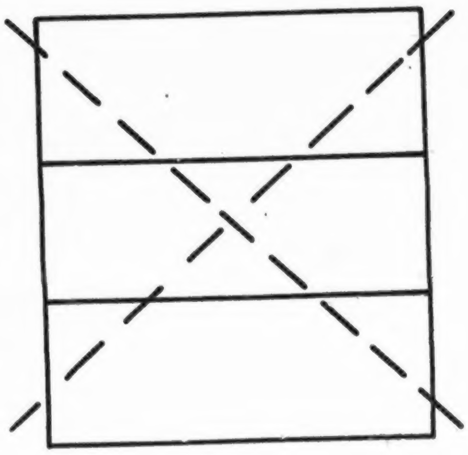


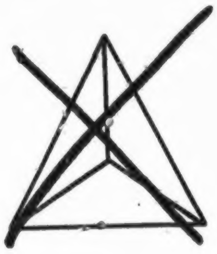
Put an X on the figures that are divided into thirds.

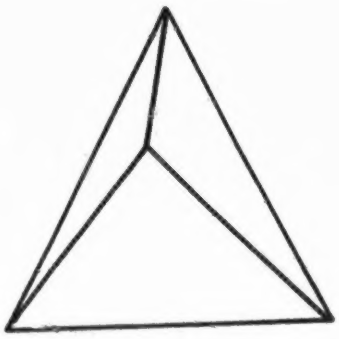


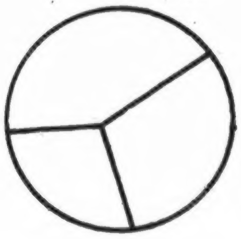


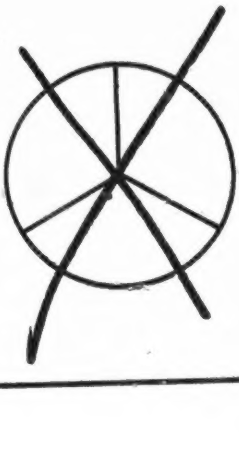












TOTAL POINTS	NUMBER CORRECT
10	10

LEVEL	UNIT	SKILL	PAGE
C	08	1	6

Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 1, in particular) and on these skill sheets, you decide to prescribe the following on 2/4:

Page	Reason
10	CET to test mastery of skill 1

After you recheck this CET, you record the page number and the date on Joe's Prescription Sheet.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen   STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3   ROOM 107   UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.				read stud. pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.							

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

This is the CET completed by Joe and corrected by the Aide.

You look at Joe's work on the CET:

Joe can: Part I - Identify and divide objects into 1/3's. Part II - Match a divided object with written fractions of 1/3, 1/2, 1/4.

Joe cannot:

You describe how Joe worked with this prescription: Joe worked without any teacher direction on the entire CET.

Based on your analysis of Joe's work, you decide to:

____ Extend prescription for the same skill.

____ Assign a second CET for the same skill

_X_ Assign entire CET for skill _2_.

____ Assign Part II of CET for skill ____.

____ Write initial prescription for skill ____.

Why? Pre-test score (skill 2) was 57% and the CET will determine if Joe has gained an understanding of skill 2 while he was working on skill 1.

Based on the previous diagnosis of Joe's behavior, his performance on the unit Pre-test (skill 2, in particular), and Part II of CET for skill 1, you decide to prescribe the following on 2/5:

Page	Reason
10P	CET to test mastery of skill 2

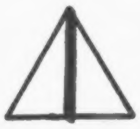
(P=CET pad)

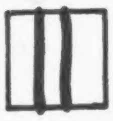
After you recheck this CET, you record the page number and the date on Joe's Prescription Sheet.

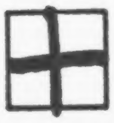
CET I

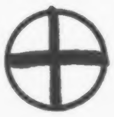
TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

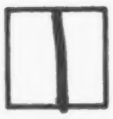
Divide the figures into the parts named.


halves


thirds

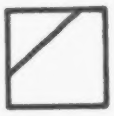
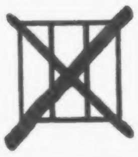
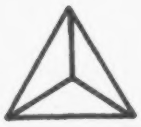
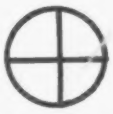

fourths


fourths

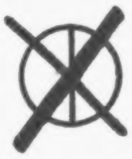
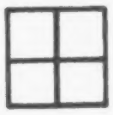
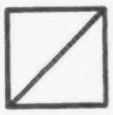
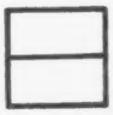

halves

Mark each figure in the row that matches the word.

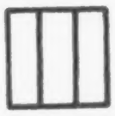
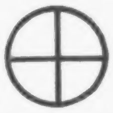
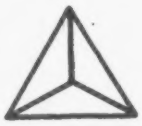
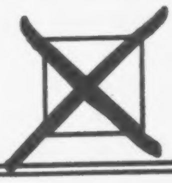
thirds

halves

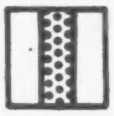





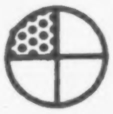
fourths

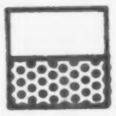





Ring the fraction.

3	100%
NO. OF PTS.	%
2	67
1	33


[✓ $\frac{1}{3}$] $\frac{1}{2}$ $\frac{1}{4}$


$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]


[✓ $\frac{1}{2}$] $\frac{1}{3}$ $\frac{1}{4}$

LEVEL	UNIT	SKILL	PAGE
C	08	1	10

This is the CET completed by Joe and corrected by the Aide.

You look at Joe's work on the CET:

Joe can: Part I - State the meaning of terms 1/2, 1/3, and 1/4; match shaded objects with written fractions.
Part II - Divide a set into 1/3's.

Joe cannot: Divide a set into 1/4's.

You describe how Joe worked with this prescription: Joe asked for and was allowed to use a manipulative aid (straws) on Part II but did not use them for solving the problems. He played with them.

Based on your analysis of Joe's work, you decide to:

____ Extend prescription for the same skill.
____ Assign a second CET for the same skill.
____ Assign entire CET for Skill ____.
____ Assign Part II of CET for Skill ____.
X Write initial prescription for Skill 3 .

Why? Part II of CET and Joe' Pre-test score (Skill 3) of 50% indicates that he still needs instruction in Skill 3.

CET I

TL. PTS.	
[✓ 7]	[✓ 100%]
NO. OF PTS.	%
6	86
5	71
4	57
3	43
2	29
1	14

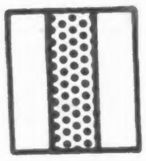
Write the number.
word that fits.

One-third means one of
3 equal parts.

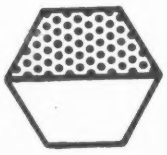
One-half means one of
2 equal parts.

One-fourth means one of
4 equal parts.

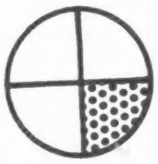
Ring the fraction.



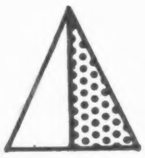
$\frac{1}{2}$ $\frac{1}{4}$ [✓ $\frac{1}{3}$]



[✓ $\frac{1}{2}$] $\frac{1}{4}$ $\frac{1}{3}$

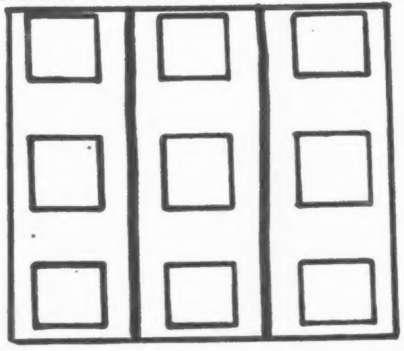


$\frac{1}{2}$ [✓ $\frac{1}{4}$] $\frac{1}{3}$

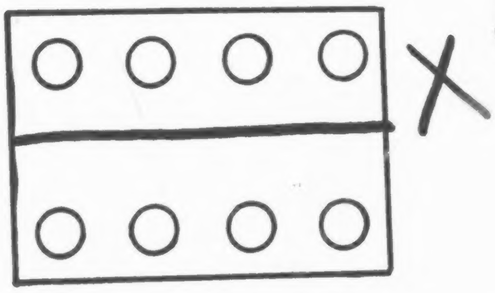


[✓ $\frac{1}{2}$] $\frac{1}{4}$ $\frac{1}{3}$

Divide this set into thirds.



Divide this set into fourths.



TL. PTS.	
2	100%
NO. OF PTS.	%
[✓ 1]	[✓ 50]

LEVEL	UNIT	SKILL	PAGE
C	08	2	10

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			redd Stud.pg.						
2-2	J.J.	1	4			4	4				
			5			6	6				
			6			10	10				
				12	Fraction pies						
				02	Mark S.						
2-2	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud. pg.						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
	DATES	2-1							

This is a copy of the STS Booklet for Skill 3.

You examine all the skill sheets and STS sheets out in the booklet to become familiar with materials for this skill.

Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 3, in particular) and Part II of the CET for Skill 2, you decide to prescribe the following on 2/5:

Page	Reason
Read Student Page	Introduces skill; previews work.
2	Discriminates among sets divided into 1/4's.
4	Circles fraction of set
5 *02	Circles fraction of set
7 02	Selects fraction which describes circled part of set.
	Divides sets into 1/2, 1/3, 1/4.

*02 (peer tutor) tells Joe that Mark will help him with these pages.

After you recheck these four pages, you record the date numbers and the date on Joe's Prescription Sheet.

ipi
MATHEMATICS

Name ____________________ Date ____________________

Class ____________________ Number ____________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff
LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

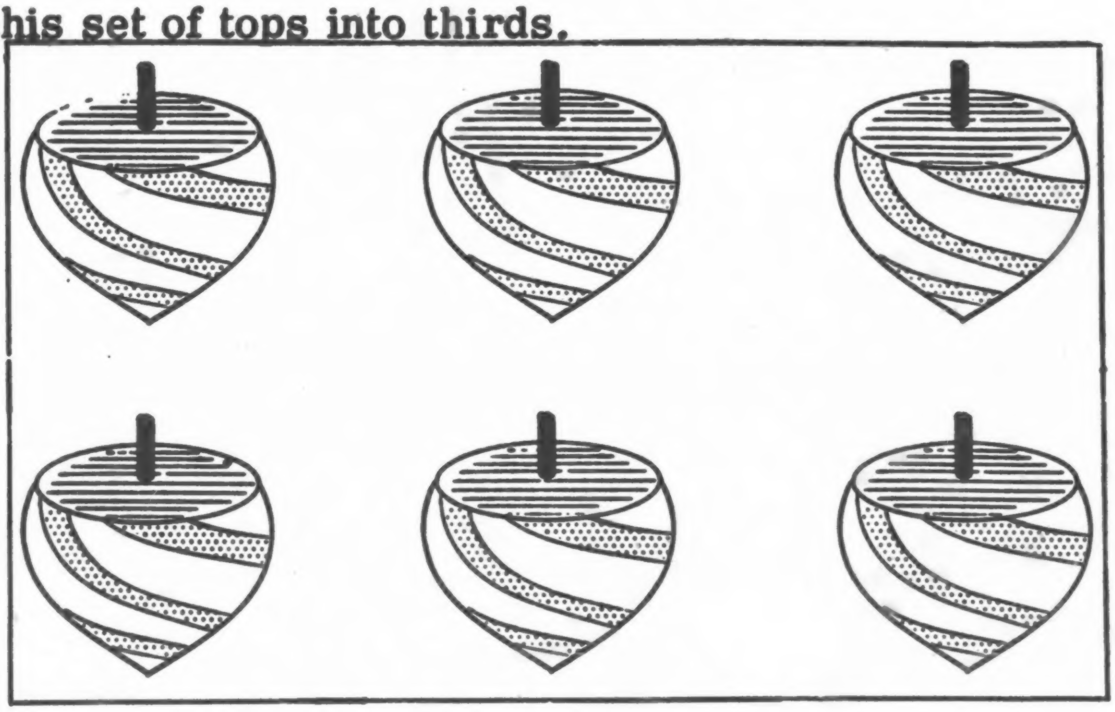
the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

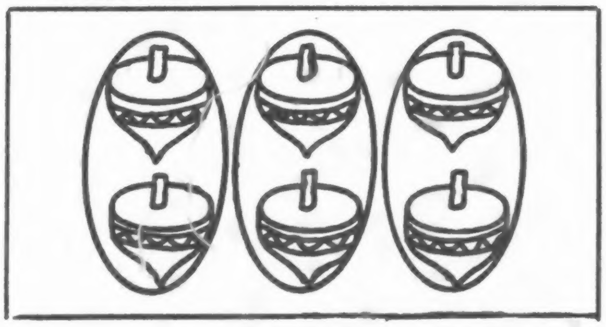
LEVEL C, FRACTIONS (08), SKILL 3

TO THE STUDENT

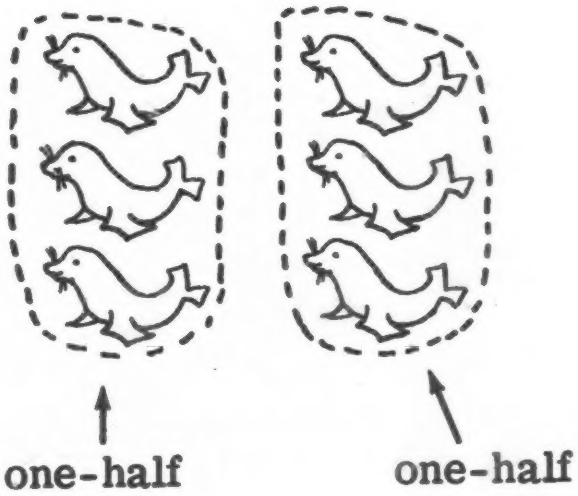
Divide this set of tops into thirds.

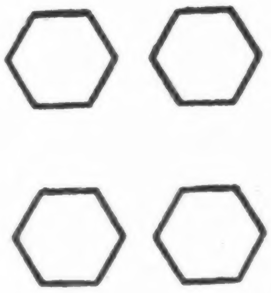


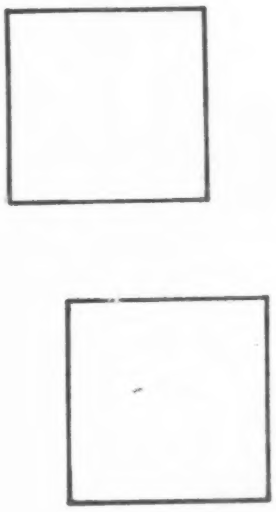
Answer

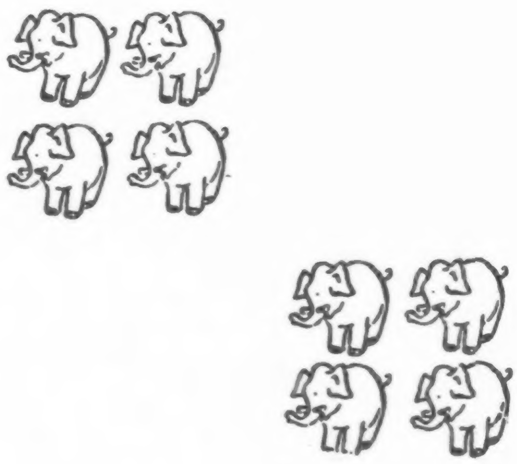


Divide each of these sets into two parts equal in number. Each part is called one-half, or $\frac{1}{2}$. Ring each half of the sets below.







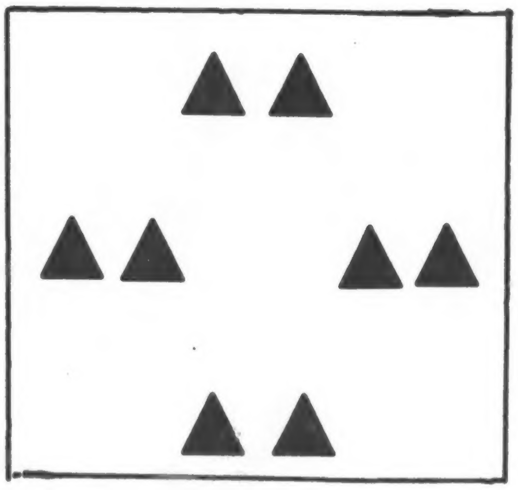


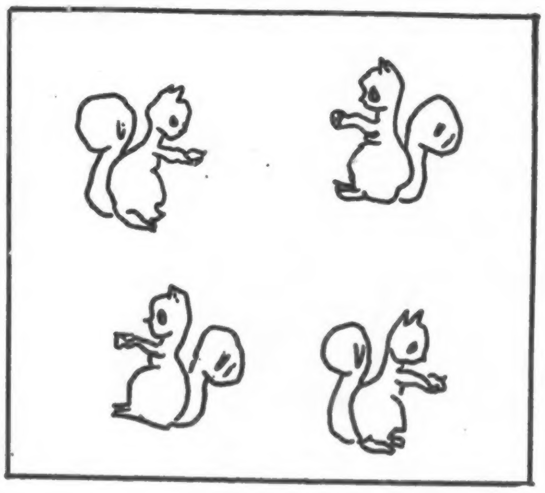
Practice, 9.

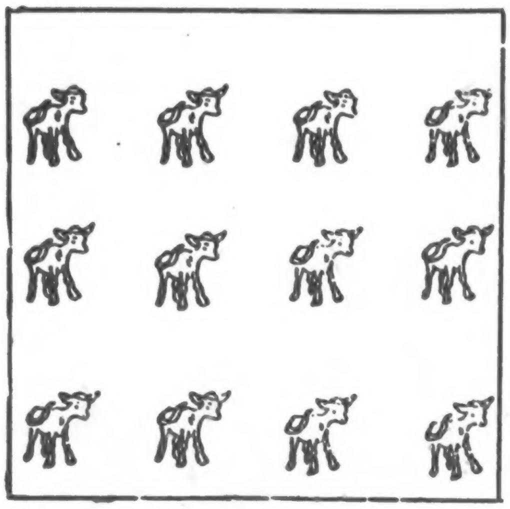
TOTAL POINTS	NUMBER CORRECT
4	

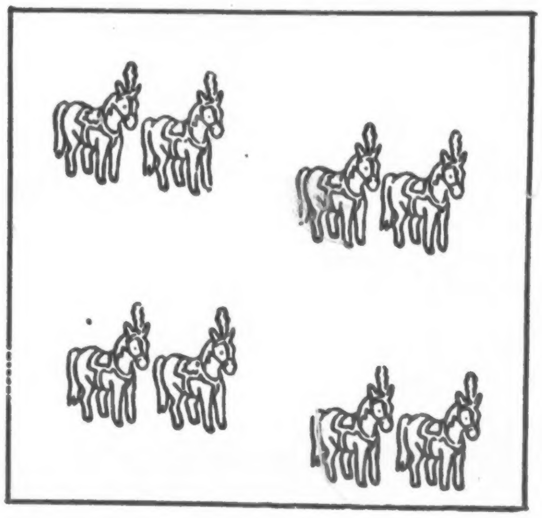
LEVEL	UNIT	SKILL	PAGE
C	08	3	1

Divide each set into four parts equal in number. Each part is called one-fourth, or $\frac{1}{4}$. Draw a ring around each fourth.







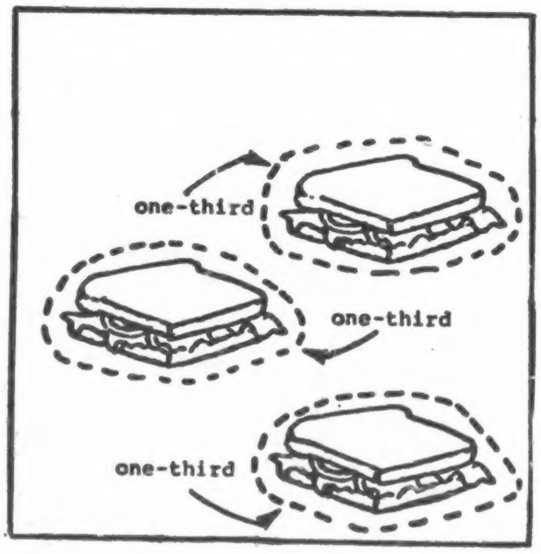


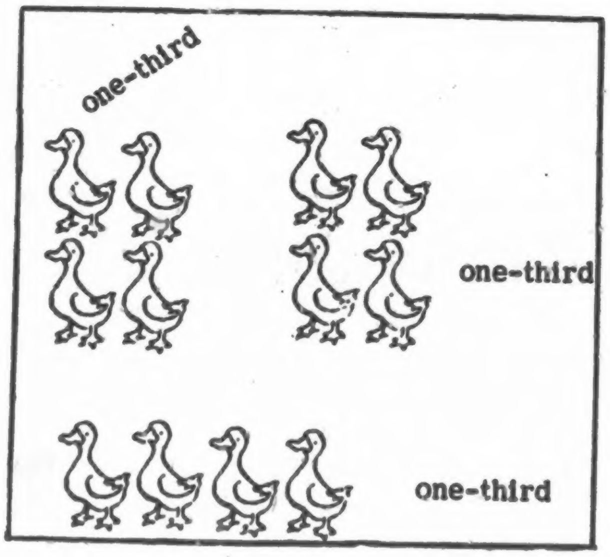
Practice, 10.

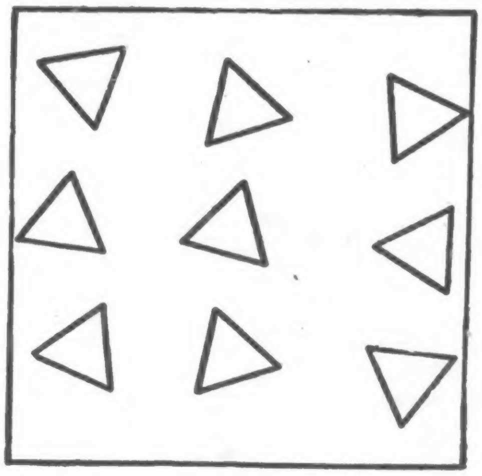
TOTAL POINTS	NUMBER CORRECT
4	

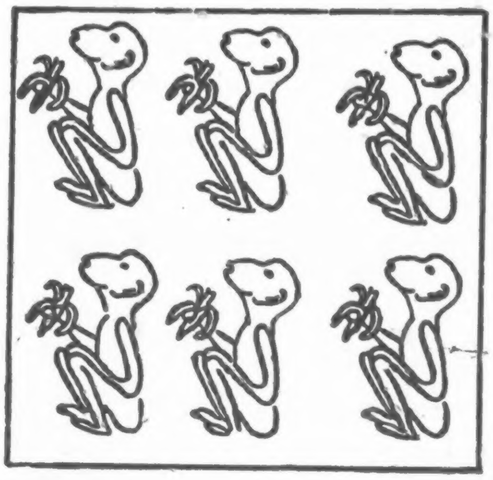
LEVEL	UNIT	SKILL	PAGE
C	08	3	2

Divide each set into three parts equal in number. Each part is called one-third, or $\frac{1}{3}$. Draw a ring around each third.


one-third
one-third
one-third


one-third
one-third
one-third



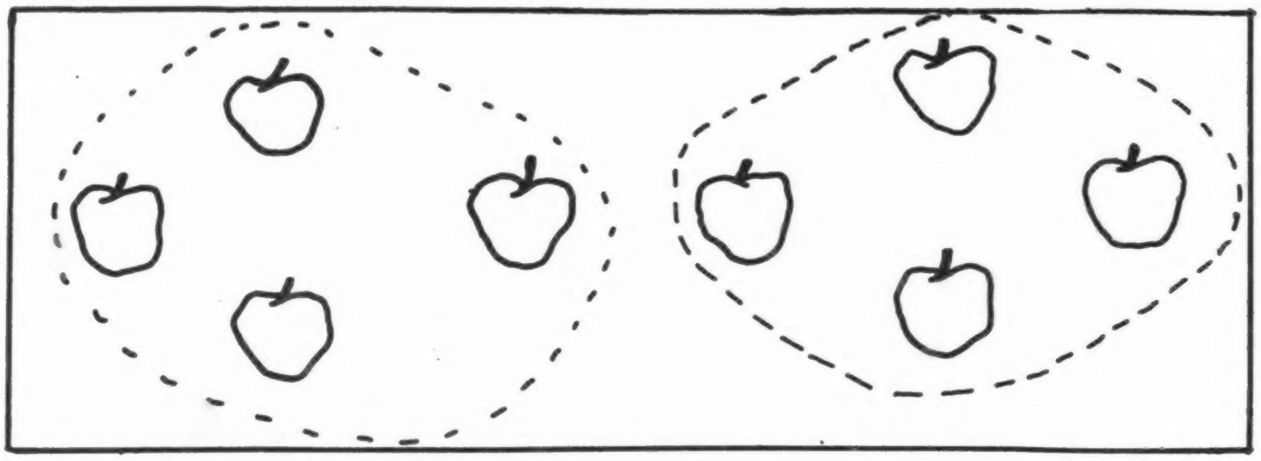


Practice, 11.

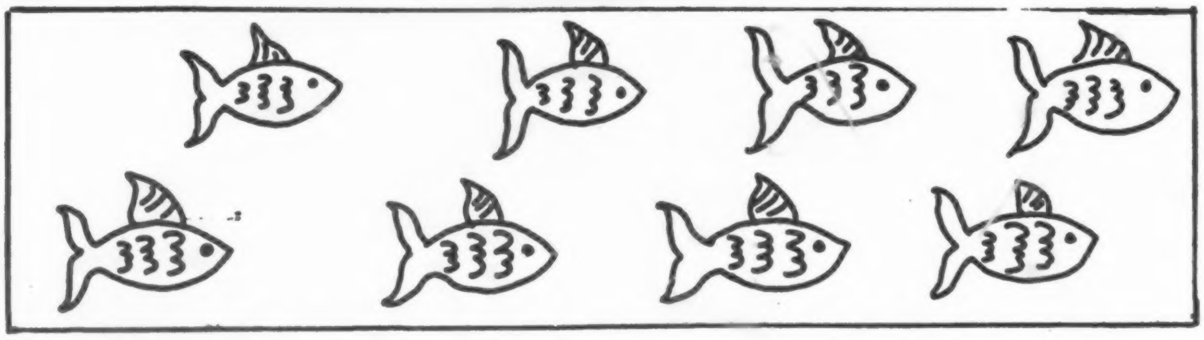
TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	3	3

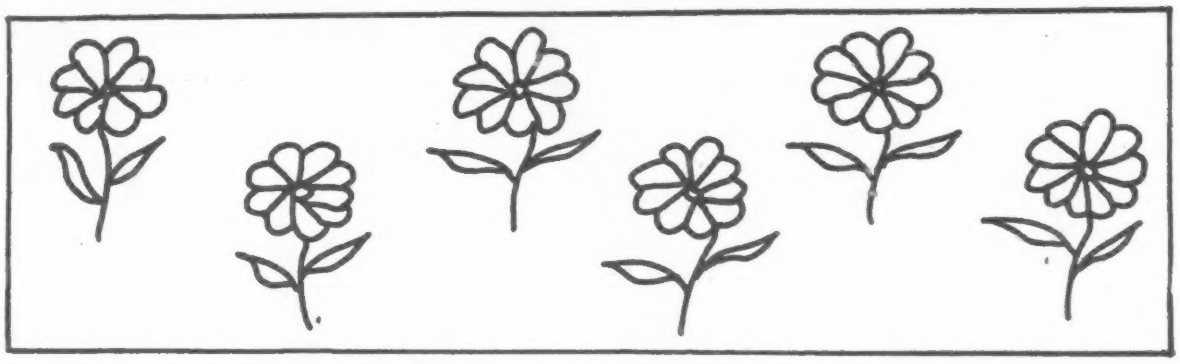
When you ring halves of a set, you ring two parts equal in number. Ring the two halves of this set.



When you ring fourths of a set, you ring four parts equal in number. Ring the four fourths of this set.



When you ring thirds of a set, you ring three parts equal in number. Ring the three thirds of this set.



TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
C	08	3	4

Ring the halves.

□ □ □ □ □ □

(Did you make 2 rings?)

Ring the thirds.

△ △ △

Ring the fourths.

○ ○ ○ ○ ○ ○ ○ ○

Ring the thirds.

△ △ △ △ △ △

(Did you make 3 rings?)

Ring the fourths.

□ □ □ □

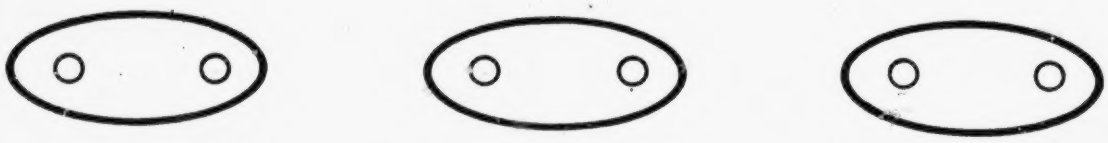
Ring the halves.

○ ○ ○ ○ ○ ○

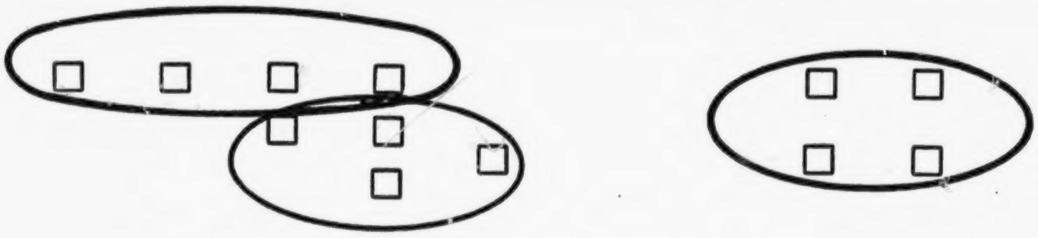
TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
C	08	3	5

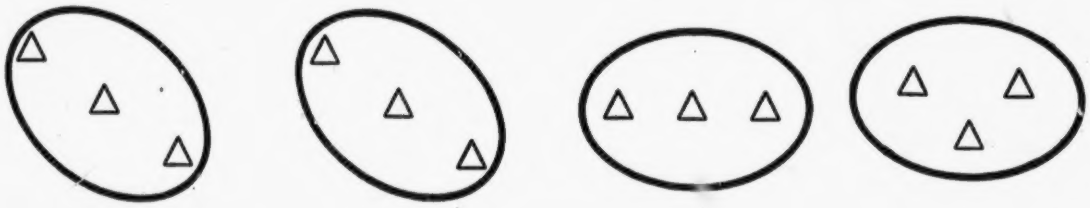
Each set below is divided to show halves, thirds, or fourths. Circle the answer which describes each set.



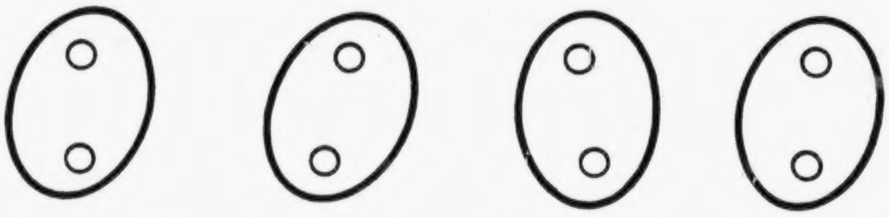
halves [✓ **thirds**] **fourths**



halves **thirds** **fourths**



halves **thirds** **fourths**



halves **thirds** **fourths**

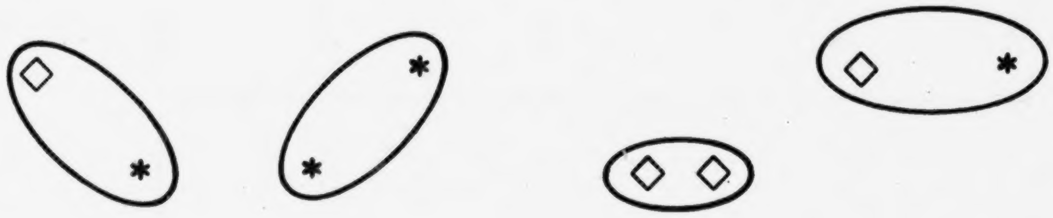
Practice, 12.

TOTAL POINTS	NUMBER CORRECT
4	

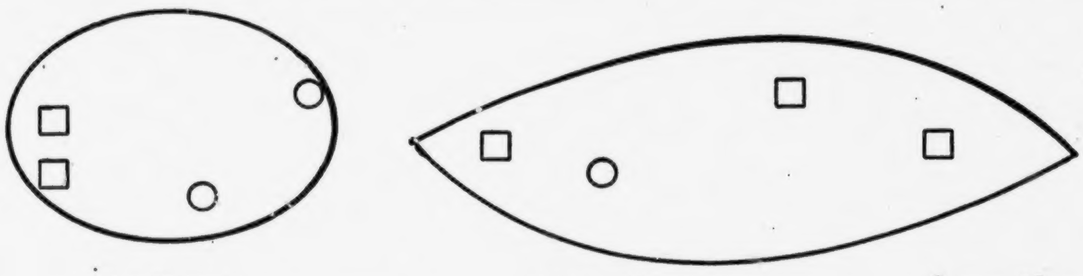
LEVEL	UNIT	SKILL	PAGE
C	08	3	6

Each set is divided to show halves, thirds, or fourths.

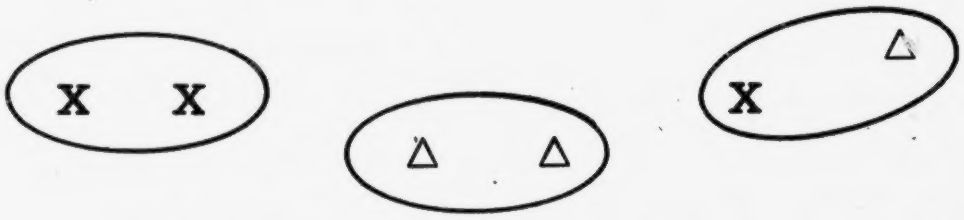
Ring the answer. Remember to count the objects.



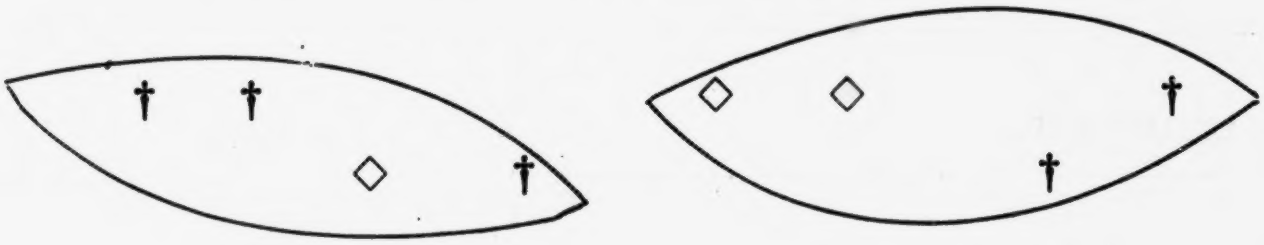
halves **thirds** **fourths**



halves **thirds** **fourths**



halves **thirds** **fourths**



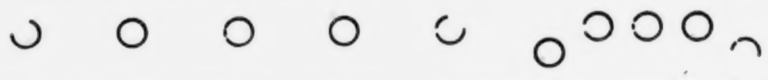
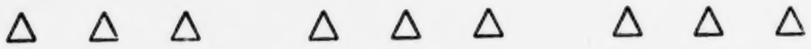
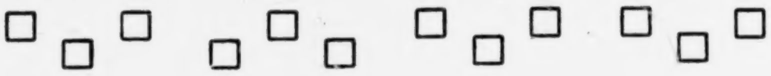
halves **thirds** **fourths**

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	3	7

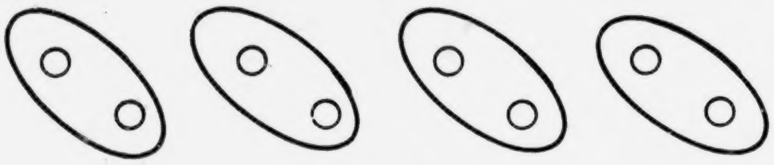
CET I

Divide the set into

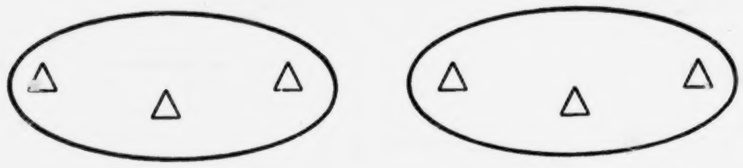
halves.	
thirds.	
fourths.	

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

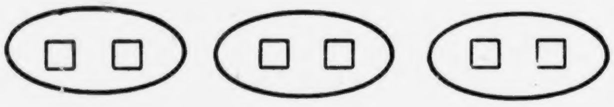
Ring the word that tells how each set is divided.



halves
fourths
thirds

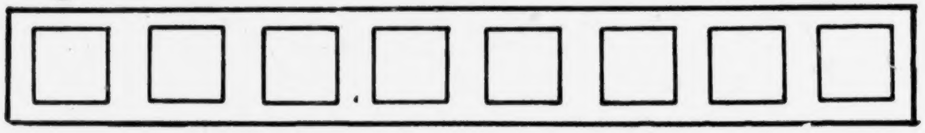


halves
fourths
thirds



halves
fourths
thirds

Ring $\frac{1}{4}$ of the set.

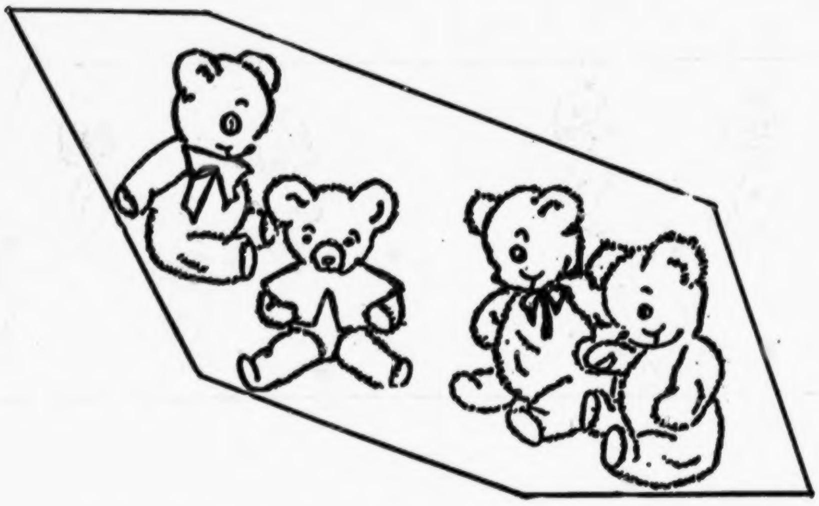


Each part is _____ of the whole set.

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

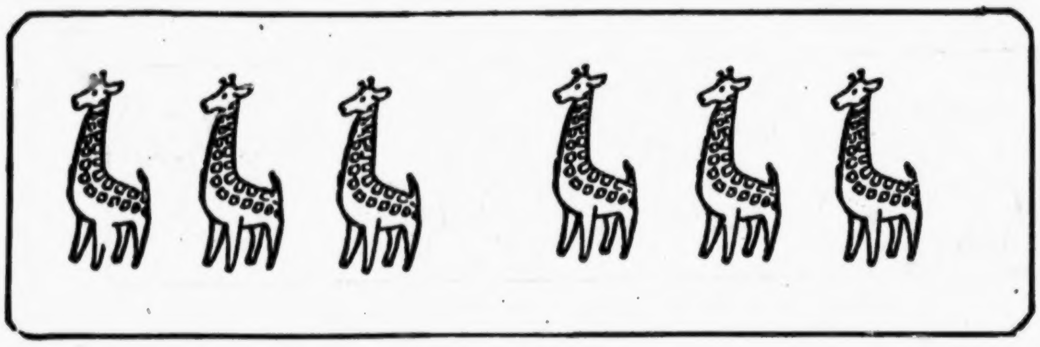
LEVEL	UNIT	SKILL	PAGE
C	08	3	8

Count the animals in this set.



There are _____ animals. Divide the set into two parts of equal number. Each part is called one-h______.

Count the animals in this set.

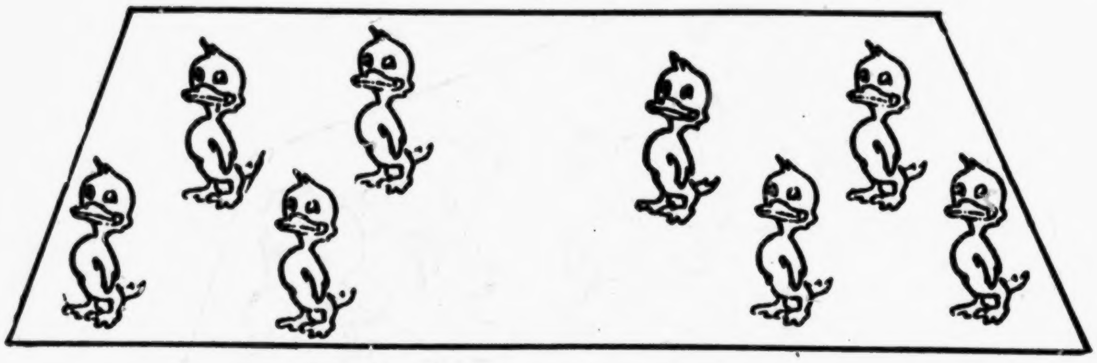


There are _____ animals. Divide the set into two parts of equal number. Each part is called one-_______.

TOTAL POINTS	NUMBER CORRECT
4	

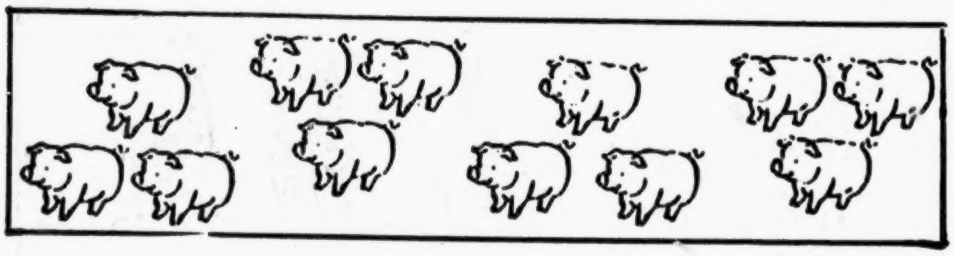
LEVEL	UNIT	SKILL	PAGE
C	08	3	9

Count the animals in this set.



There are _____ animals. Divide the set into four parts of equal number. Each part has _____ animals. Each part is called one-f________.

Count the animals in this set.

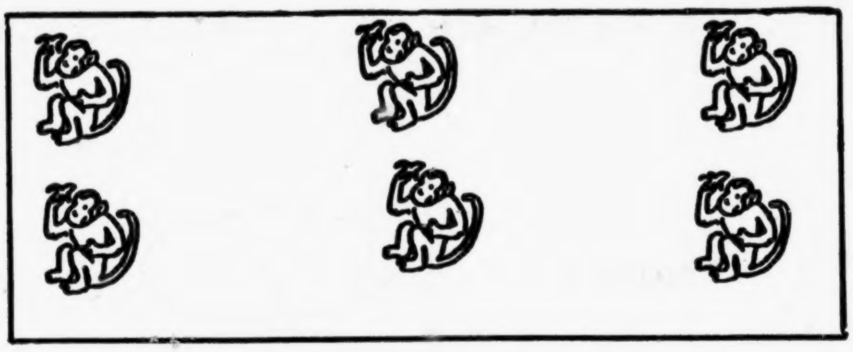


There are _____ animals. Divide the set into four parts of equal number. Each part has _____ animals. Each part is called one-_________.

TOTAL POINTS	NUMBER CORRECT
6	

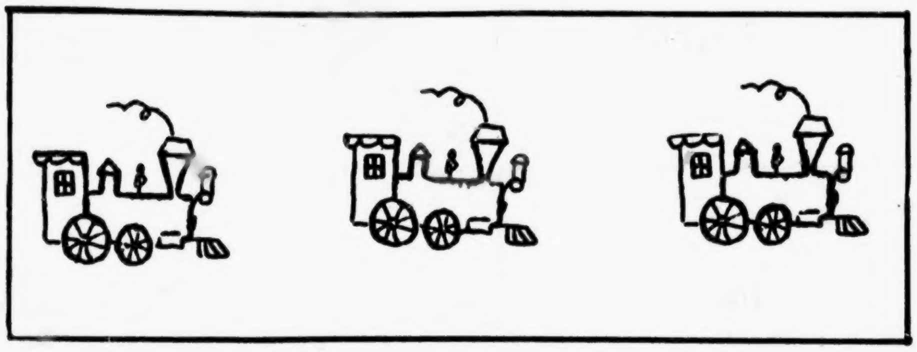
LEVEL	UNIT	SKILL	PAGE
C	08	3	10

Count the animals in this set.



There are _____ animals. Divide the set into three parts of equal number. Each part has _____ animals. Each part is called one-t________.

Count the objects in this set.



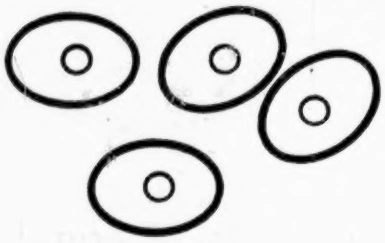
There are _____ objects. Divide the set into three parts of equal number. Each part has _____ object. Each part is called one-________

TOTAL POINTS	NUMBER CORRECT
6	

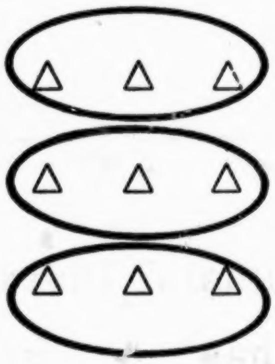
LEVEL	UNIT	SKILL	PAGE
C	08	3	11

Ring the correct word.

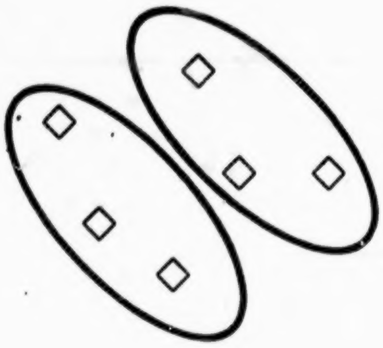
Remember that halves are 2 parts of equal number.
that fourths are _____ parts of equal number.
that thirds are _____ parts of equal number.



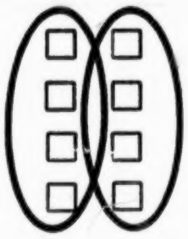
halves
thirds
fourths



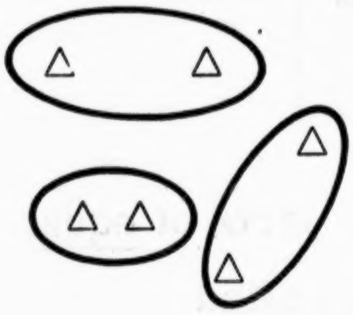
halves
thirds
fourths



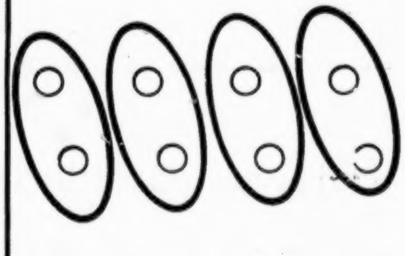
halves
thirds
fourths



halves
thirds
fourths



halves
thirds
fourths



halves
thirds
fourths

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
C	08	3	12

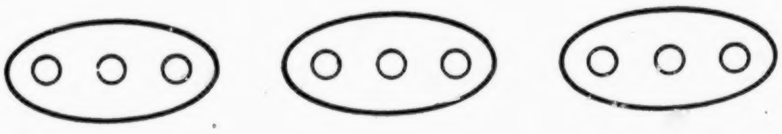
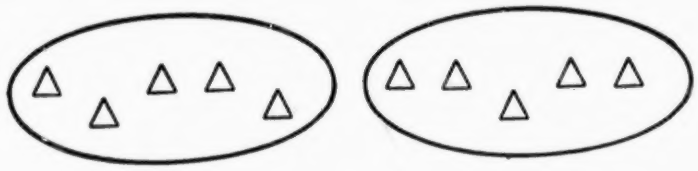
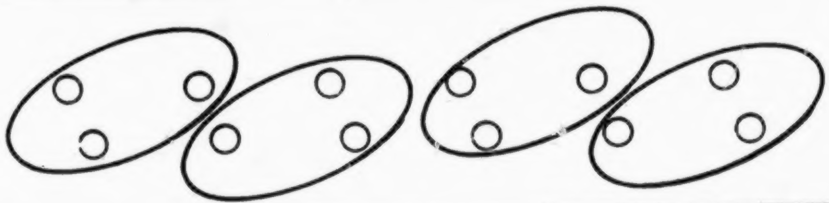
CET II

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

Divide the set into

halves.	△ △ △ △ △ △ △ △ △ △ △ △
fourths.	□ □ □ □ □ □ □ □
thirds.	□ □ □ □ □ □ □ □ □ □ □ □

Ring the word that tells how each is divided.

	halves thirds fourths
	halves thirds fourths
	halves thirds fourths

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Ring $\frac{1}{3}$ of the set.

○ ○ ○ ○ ○ ○

LEVEL C, FRACTIONS, SKILL 3

OBJECTIVE: Divides a set of objects into 2, 3, or 4 equal parts when instructed to divide a set into halves, thirds, or fourths. Identifies a set of objects divided into halves, thirds, or fourths.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Divides set into halves.	9
2.	Divides set into fourths.	10
3.	Divides set into thirds.	11
4.	Circles fraction of set.	
5.	Circles fraction of set.	
6.	Selects fraction which describes circled part of set.	12
7.	Selects fraction which describes circled part of set.	
8.	CET I.	
	CET II.	13

Teaching Aids:

Fractional Parts on a Board (M. Bradley)
Simple Fractions (Creative Playthings)
Fractions Made Easy (Ideal)

Circle pages that are to be done.

ipi
MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP ____________
GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.				read stud.pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.			12.	Fraction pies						
				02.	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud.pg.						
			2								
			4								
			5								
			7								

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

P1 – 1968

These are the four skill sheets completed by Joe and corrected by the Aide.

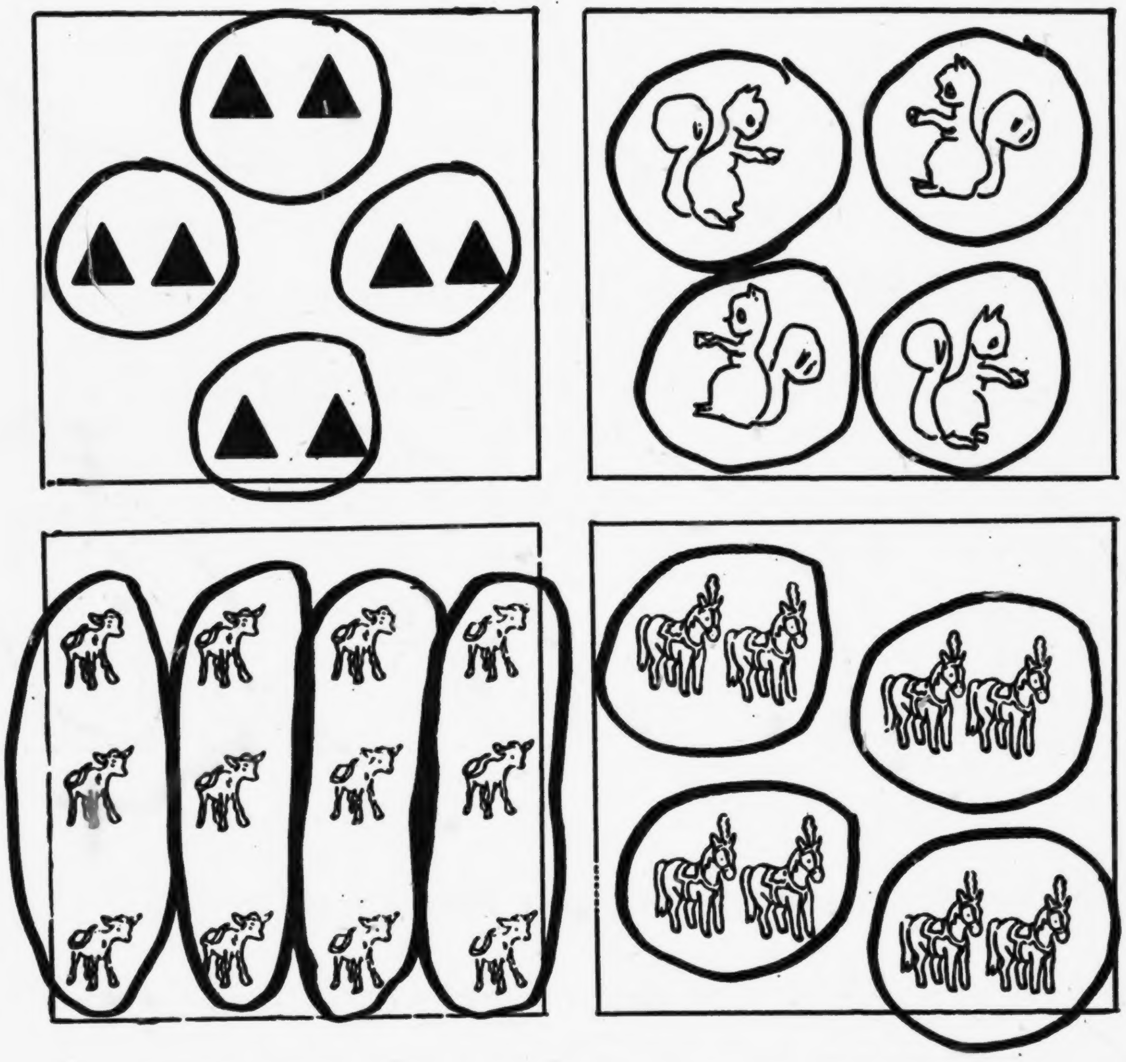
You study the scores and look at Joe's work on the skill sheets:

Joe can: Discriminate between and divide sets into 1/4's, 1/3's and 1/2's.

Joe cannot:

You describe how Joe worked with this prescription: Joe worked well independently; he and Mark took a longer time for the peer tutoring than had been expected, but they were very intent on their work and Joe benefited from this setting.

Divide each set into four parts equal in number. Each part is called one-fourth, or $\frac{1}{4}$. Draw a ring around each fourth.

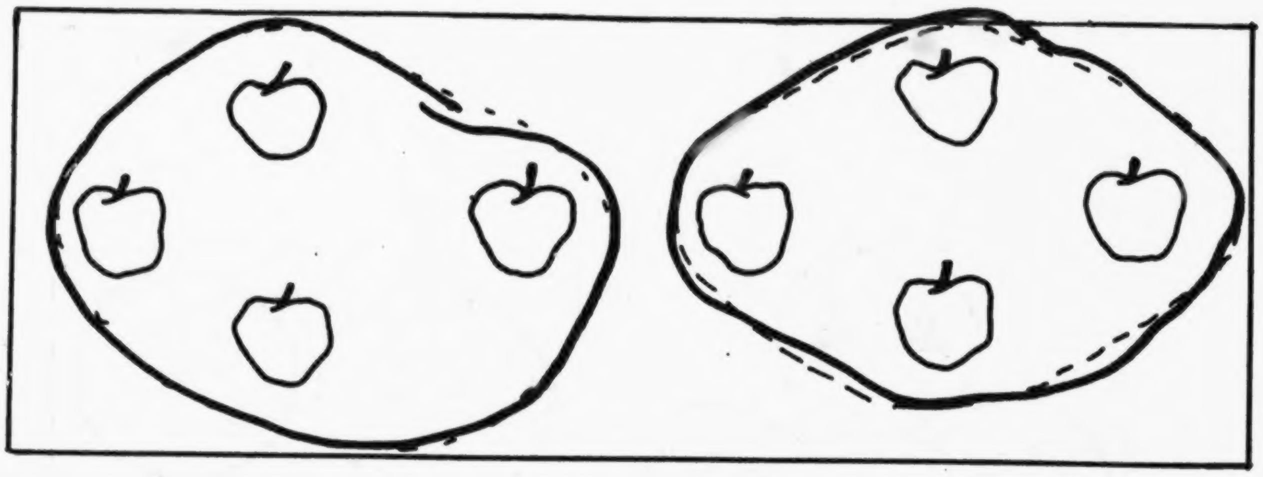


Practice, 10.

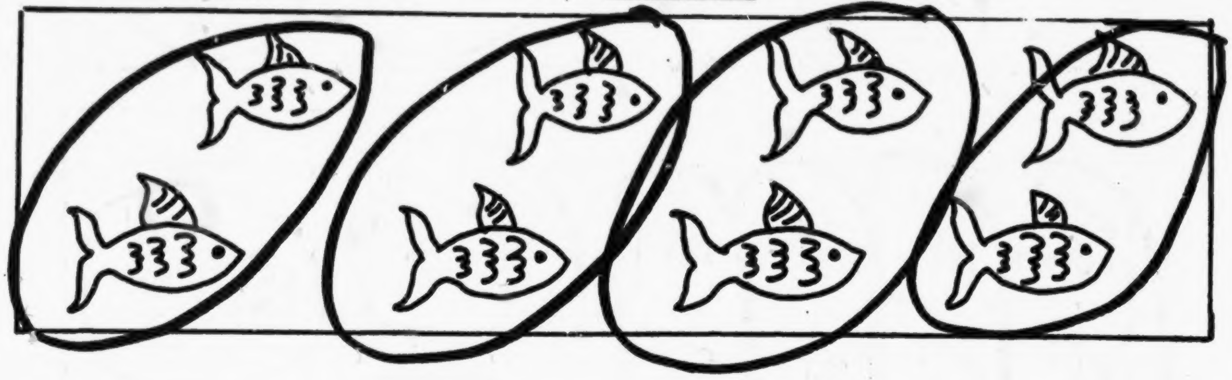
TOTAL POINTS	NUMBER CORRECT
4	4

LEVEL	UNIT	SKILL	PAGE
C	08	3	2

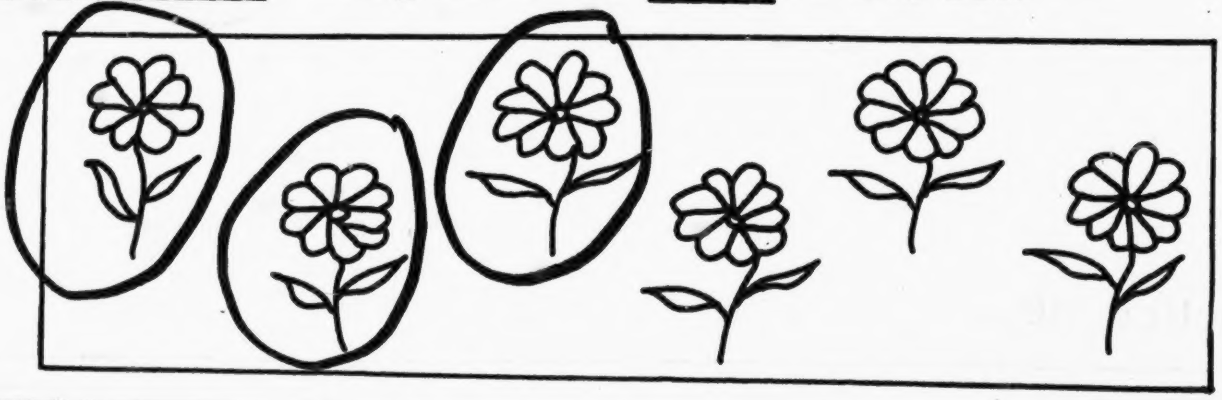
When you ring halves of a set, you ring two parts equal in number. Ring the two halves of this set.



When you ring fourths of a set, you ring four parts equal in number. Ring the four fourths of this set.



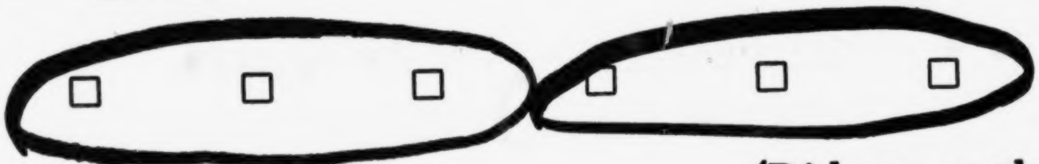
When you ring thirds of a set, you ring three parts equal in number. Ring the three thirds of this set.



TOTAL POINTS	NUMBER CORRECT
3	2

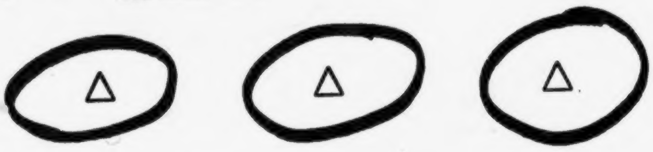
LEVEL	UNIT	SKILL	PAGE
C	08	3	4

Ring the **halves.**

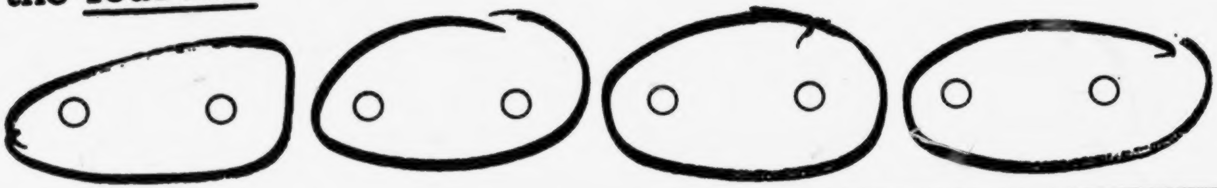


(Did you make 2 rings?)

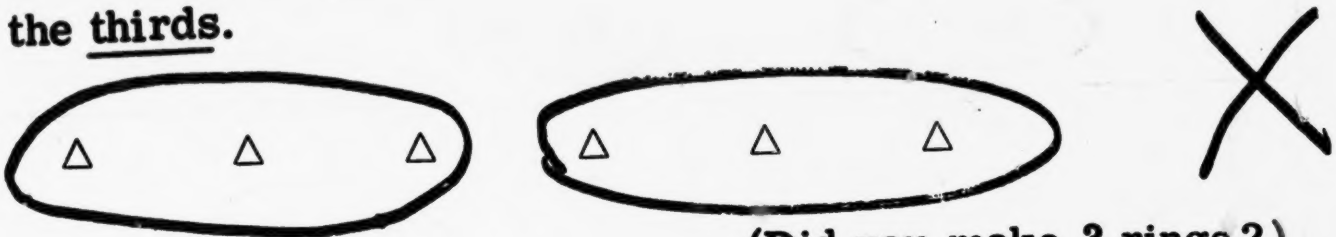
Ring the **thirds.**



Ring the **fourths.**

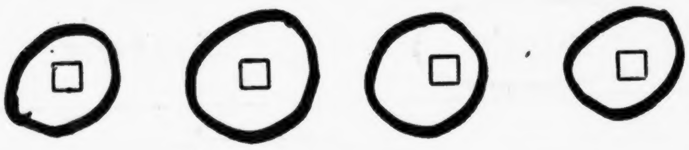


Ring the **thirds.**

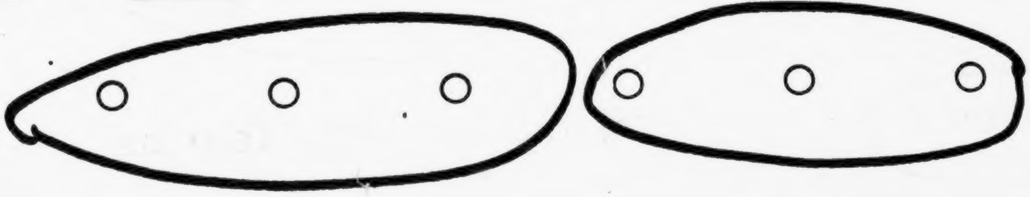


(Did you make 3 rings?)

Ring the **fourths.**



Ring the **halves.**

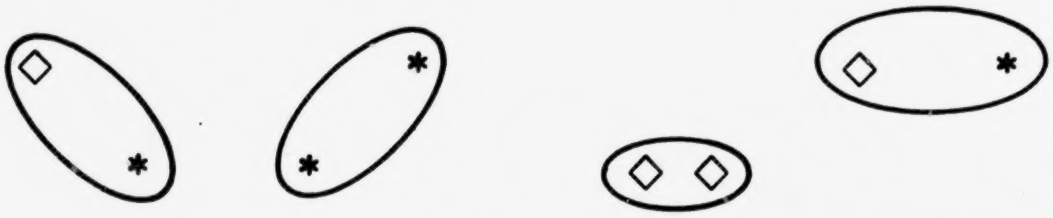


TOTAL POINTS	NUMBER CORRECT
6	5

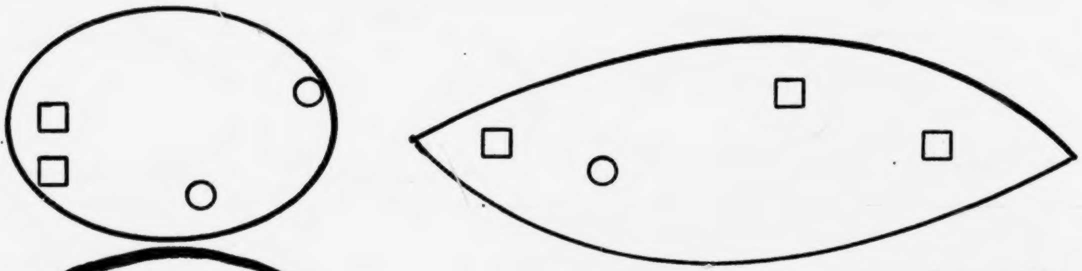
LEVEL	UNIT	SKILL	PAGE
C	08	3	5

Each set is divided to show halves, thirds, or fourths.

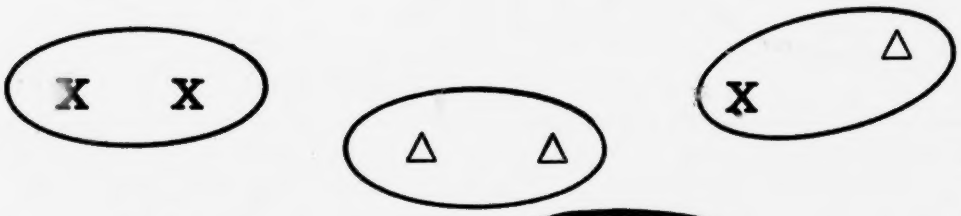
Ring the answer. Remember to count the objects.



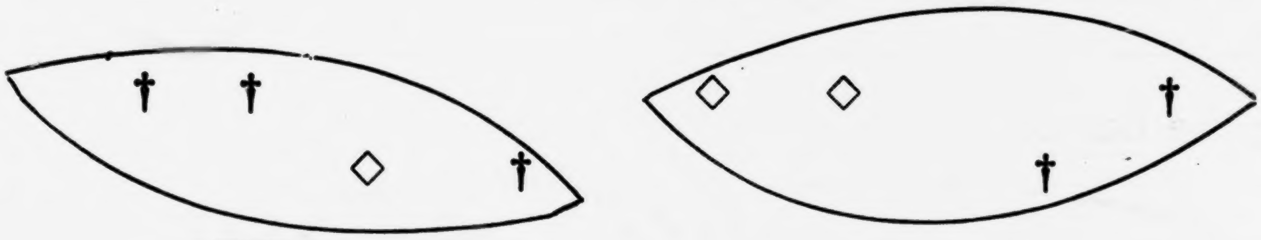
halves thirds [✓ fourths]



[✓ halves] thirds fourths



halves [✓ thirds] fourths



[✓ halves] thirds fourths

TOTAL POINTS	NUMBER CORRECT
4	4

LEVEL	UNIT	SKILL	PAGE
C	08	3	7

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP ____________
GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud.pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
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04	Large Group
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SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

Based on your analysis of Joe's work, you decide to:

_____ Revise original prescription
_____ Extend prescription
__X__ Assign a CET for Skill __3__

Why? Joe's performance on the skill sheets indicates mastery of Skill 3.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and on the skill sheets for this skill, you decide to prescribe the following on 2/10:

Page	Reason
8	CET to test mastery of Skill 3.

After you recheck this CET, you record the page number and the date on Joe's Prescription Sheet.

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP
GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud.pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T.							

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

This is the CET completed by Joe and corrected by the Aide.

You look at Joe's work on the CET:

Joe can: Part I - Divide sets into 1/2's, 1/3, 1/4's; match divided set in 1/4's and 1/3's with written fraction clues.

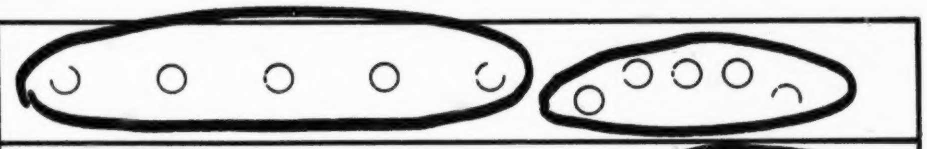
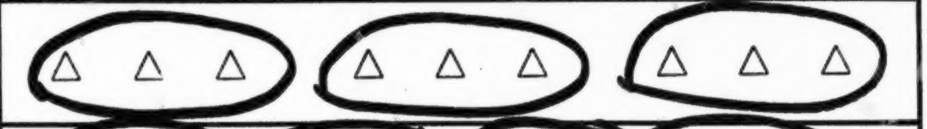
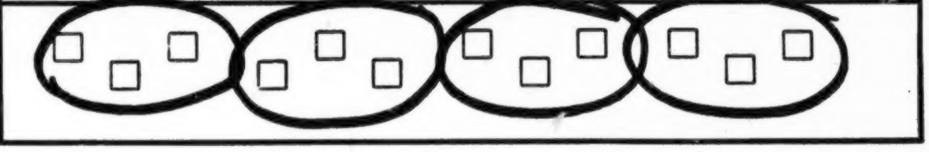
Part II - Divide a set into 1/4's.

Joe cannot: Match a set divided into 1/2's with written fraction name. Write fraction name for set divided into 1/2's.

You describe how Joe worked with this prescription: Joe appeared very confused while completing this CET.

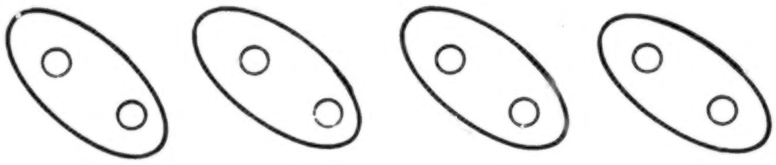
CET I

Divide the set into

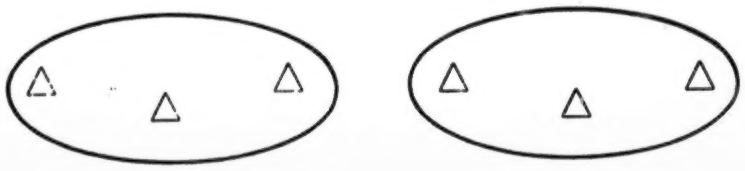
halves.	
thirds.	
fourths.	

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

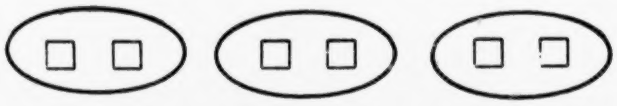
Ring the word that tells how each set is divided.



halves
[✓ fourths]
thirds



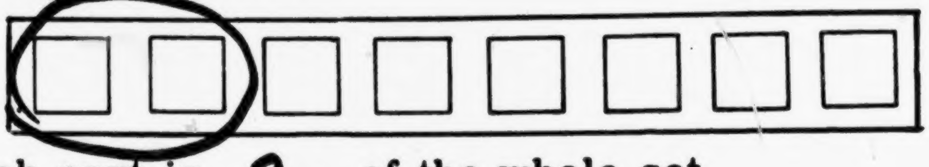
halves
fourths
[✓ thirds] X



halves
fourths
[✓ thirds]

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Ring $\frac{1}{4}$ of the set.



Each part is 2 of the whole set.

LEVEL	UNIT	SKILL	PAGE
C	08	3	8

75/76

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C	1	10	C.E.T.				8/8	100	3/3	1[illegible]
2-5	C.J.C	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C	3			read stud. pg.						
			2								
			4								
			5								
			7								
2-10	C.J.C	3	8	C.E.T.				5/6	83	1/2	50

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

Based on your analysis of Joe's work, you decide to:

__X__ Extend prescription for the same skill.
____ Assign a second CET for the same skill.
____ Assign entire CET for Skill ____.
____ Assign Part IIof CET for Skill ____.

Why? Joe does not demonstrate an understanding of 1/2's.

Based on the previous diagnosis of Joe's behavior, his performance on the Pre-Test (Skill 3, in particular) and the CET for Skill 3, you decide to prescribe the following on 2/10:

Page	
1	Divides sets into 1/2's.
9	Divides sets into 1/2's.
12	Selects fraction which describes circled part of set.

After you recheck these three pages, you record the page number and the date on Joe's Prescription Sheet. Notice you move onto the back of Joe's Prescription Sheet.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
^											
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C	3			read stud. pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C	3	1								
			9								
			12								

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

P1 – 1968

These are the three skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Divide simple sets in halves, thirds and fourths.

Joe cannot: Divide sets that contain massed objects; divide sets into mixed fractional parts.

You describe how Joe worked with this prescription: Joe worked too rapidly on this material and made errors of incompletion, omission.

Based on your analysis of Joe's work, you decide to:

X Extend prescription for the same skill.

____ Assign a second CET for the same skill.

____ Assign entire CET for skill 4.

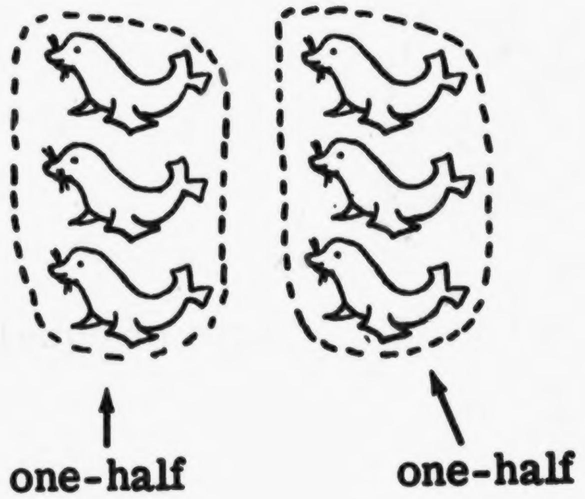
Why? Joe gets confused in dividing sets with many objects; he needs to learn to divide sets with accuracy.

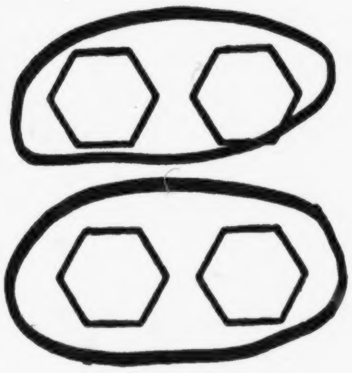
Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 3, in particular) and on the skill sheets for this skill, you decide to prescribe the following on 2/12:

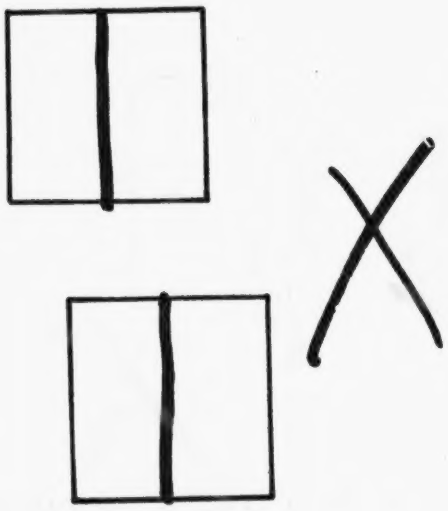
Page		Reason
Blocks	12	A group of four students need work in fractional parts (1/4, 1/3, 1/2).
Teacher Page	03	You have prepared a brief review and a game sheet for a small group instructional setting with the blocks as manipulative aids.

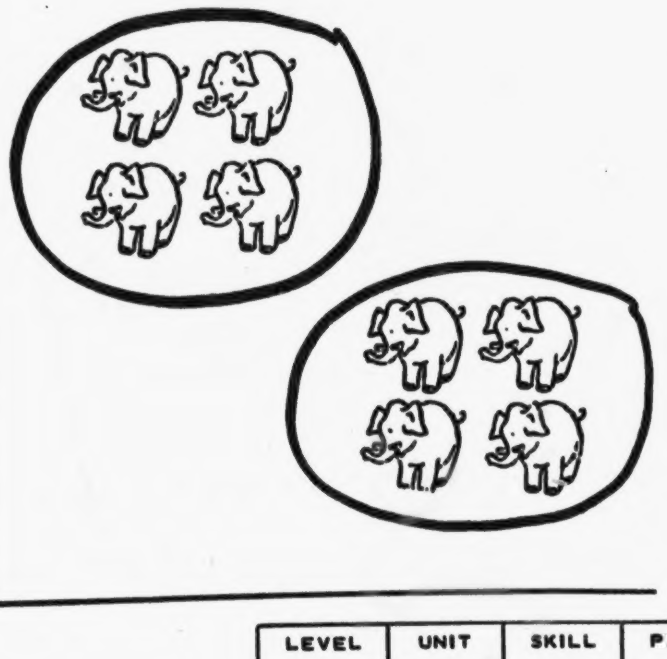
After you recheck this plan, you record the page numbers and the date on Joe's Prescription Sheet.

Divide each of these sets into two parts equal in number. Each part is called one-half, or $\frac{1}{2}$. Ring each half of the sets below.







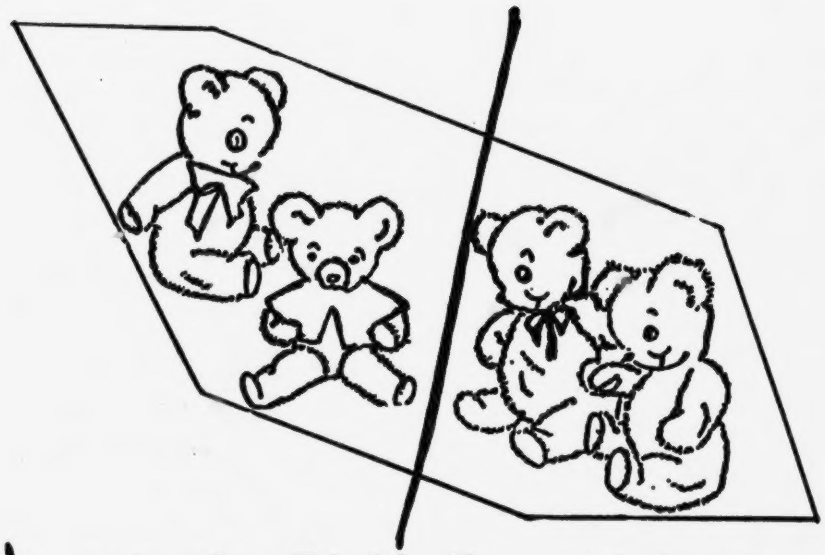


Practice, 9.

TOTAL POINTS	NUMBER CORRECT
4	3

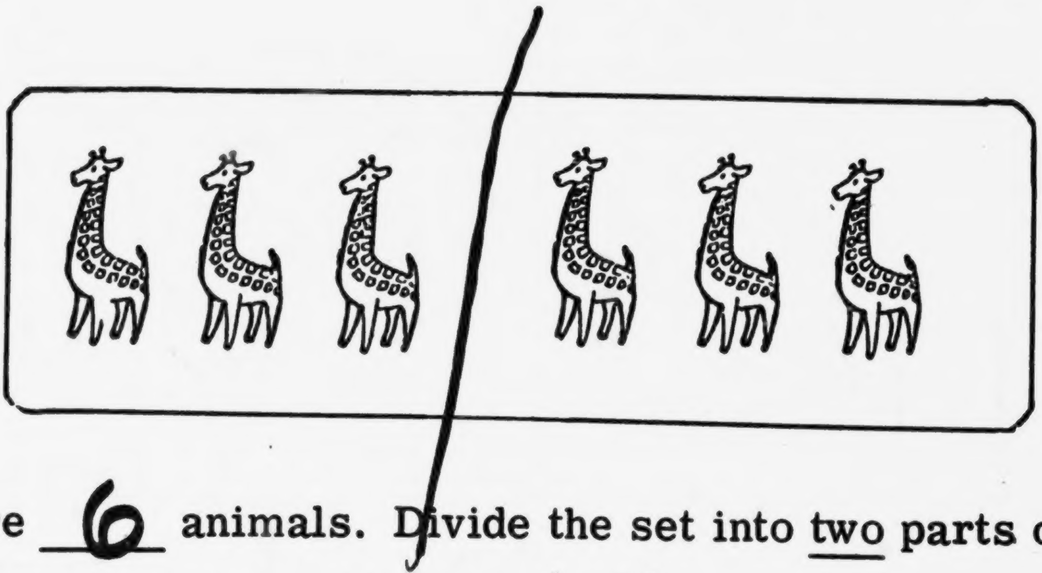
LEVEL	UNIT	SKILL	PAGE
C	08	3	1

Count the animals in this set.



There are 4 animals. Divide the set into two parts of equal number. Each part is called one-half.

Count the animals in this set.



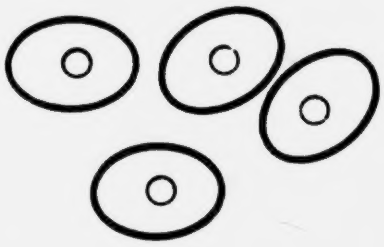
There are 6 animals. Divide the set into two parts of equal number. Each part is called one-half.

TOTAL POINTS	NUMBER CORRECT
4	4

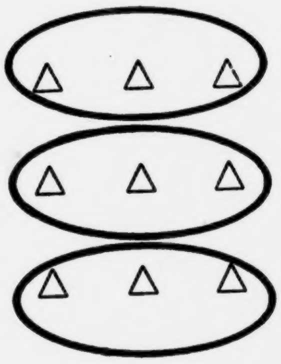
LEVEL	UNIT	SKILL	PAGE
C	08	3	9

Ring the correct word.

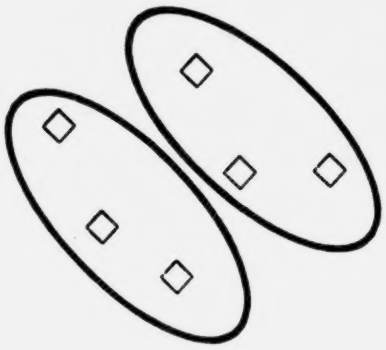
Remember that halves are 2 parts of equal number.
that fourths are 4 parts of equal number.
that thirds are 3 parts of equal number.



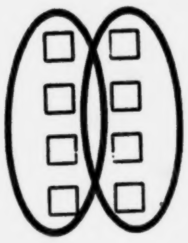
halves
thirds
[✓ fourths]



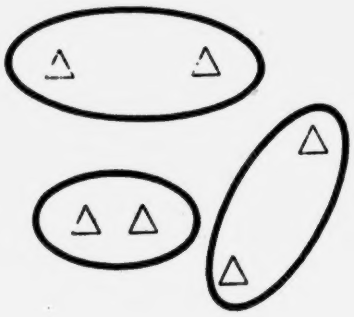
halves
[✓ thirds]
fourths



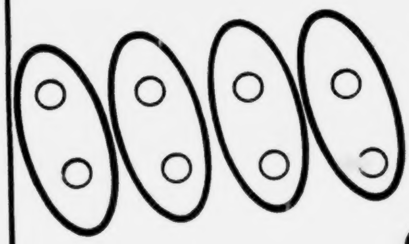
[✓ halves]
thirds
fourths



[✓ halves]
thirds
fourths



halves
[✓ thirds]
fourths



halves
thirds
[✓ fourths]

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
C	08	3	12

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud. pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C.	3	1			4	3				
			9			4	4				
			12			9	9				
2-12	C.J.C.	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
	DATES	2-1							

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen STUDENT NUMBER 0976 UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	PART 1		PART 2	
								NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C.	3		03	Teacher pg.						

This is the teacher-made sheet that was completed by Joe in the small group setting. You checked his work before releasing him from the group and recorded the score on his Prescription Sheet at that time.

Joe can: Divide sets of many objects into fractional parts (1/2, 1/3, 1/4 by matching fraction name.

Joe cannot:

You describe how Joe worked with this prescription: Joe worked very well in the small group; being with the other students allowed him to do some tutoring, which provided encouragement and motivation for him.

Based on your analysis of Joe's work, you decide to:

____ Revise original prescription

____ Extend prescription

_X_ Assign a CET for Skill _3_.

Why? Joe's performance on the materials indicate mastery of Skill 3.

Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 3, in particular) and on these skill sheets, you decide to prescribe the following on 2/12:

Page	Reason
13 CET	To test mastery of Skill 3

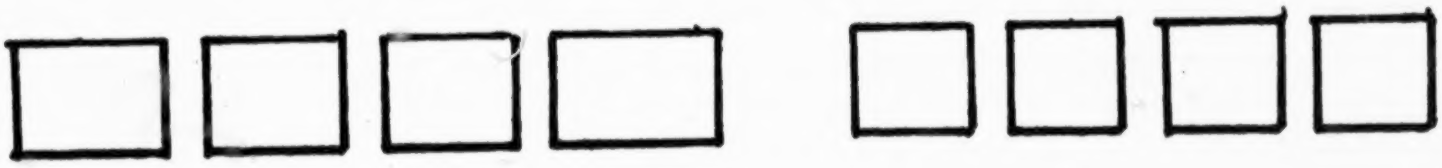
After you recheck this CET, you record the page number and the date on Joe's Prescription Sheet.

Name Joe Bowen

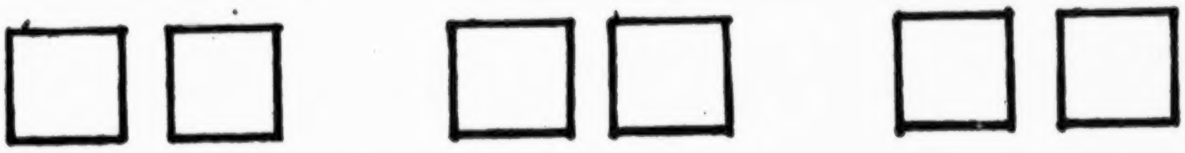
Grade 3

Directions: Get an aid from the math table that can be used to show fractions. Use it to help you work these problems.

1. Arrange your blocks in the space below to show one-half (1/2):



2. Arrange your blocks in the space below to show one-third (1/3):



3. Arrange your blocks in the space below to shoe one-fourth (1/4):

Show this to the teacher.

4	4

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP
GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-	test								
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud. pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C	3	8	C.E.T.				5/6	100	1/2	50
2-10	C.J.C.	3	1			4	3				
			9			4	4				
			12			9	9				
2-12	C.J.C	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen STUDENT NUMBER 0976 UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C.	3		03	Teacher pg.	4	4				
2-12	C.J.C	3	13	C.E.T.							

This is the CET completed by Joe and corrected by the Aide.

You look at Joe's work on the CET:

Joe can: PART I - Divide sets with fraction name clues of halves, thirds, fourths; match fraction names and divided sets.

PART II -

Joe cannot: Write the fraction 1/3.

You describe how Joe worked with this prescription: Joe worked quickly on this second CET for this skill.

Based on your analysis of Joe's work, you decide to:

____ Extend prescription for the same skill.

____ Assign a second CET for the same skill.

____ Assign entire CET for skill __4__.

____ Assign Part II of CET for skill __4__.

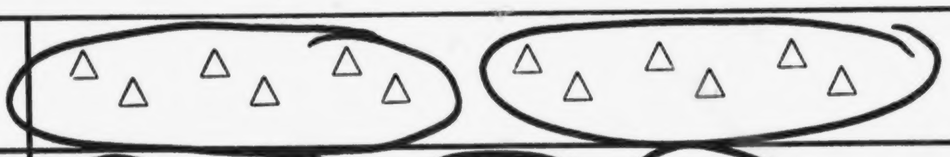
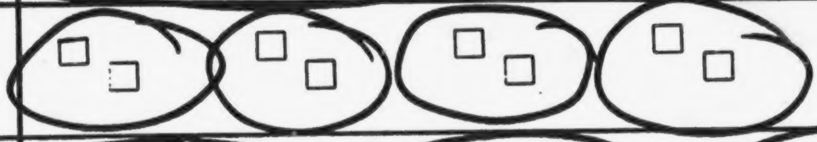
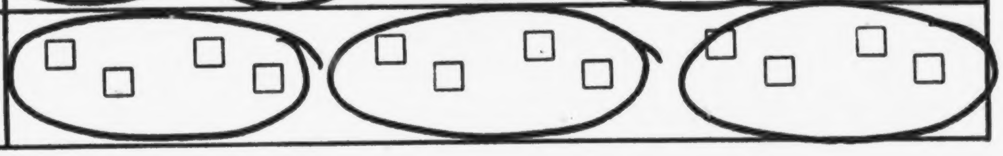
__X__ Write initial prescription for skill __4__.

Why? Pre-test score (Skill 4) was 100%, but Part II of the CET for Skill 3 was only 50%; Joe may not retain his mastery of this material.

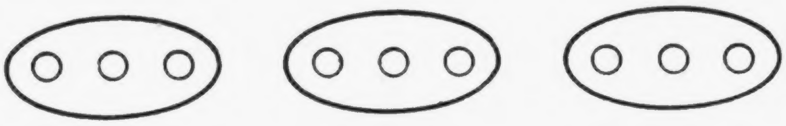
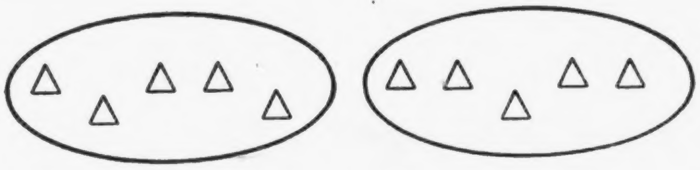
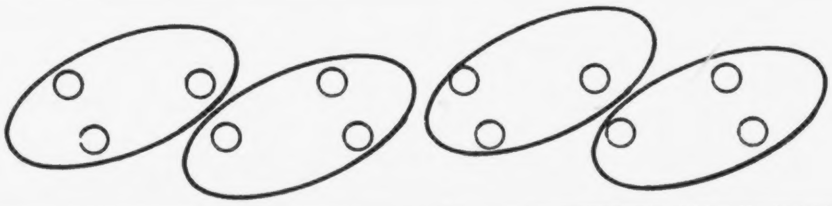
CET II

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

Divide the set into

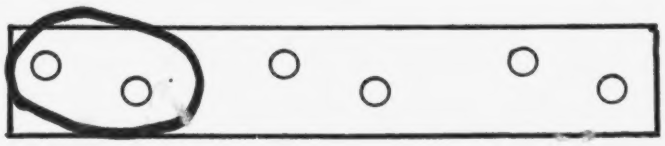
halves.	
fourths.	
thirds.	

Ring the word that tells how each is divided.

	halves [✓ thirds] fourths
	[✓ halves] thirds fourths
	halves thirds [✓ fourths]

Ring $\frac{1}{3}$ of the set.

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50



Each part is — of the whole set. X

LEVEL	UNIT	SKILL	PAGE
C	08	3	13

This is a copy of the STS booklet for Skill 4.

You examine all the skill sheets in the booklet to become familiar with materials for this skill.

Based on the previous diagnosis of Joe's behavior, his performance on the Pretest (Skill 4, in particular) and Part 2 of CET for Skill 3, you decide to prescribe the following on 2/15:

Page	Reason
Student Page	Introduces skill; previews work
1	Divides sets into halves; writes 1/2
4	Divides sets into fourths; writes 1/4
8	Divides sets into thirds; writes 1/3
9	Divides sets into thirds; writes 1/3

After you recheck these four pages, you record the page numbers and the date on Joe's Prescription Sheet.

ipi
MATHEMATICS

Name ____________________ Date ____________________

Class ____________________ Number ____________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff
LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

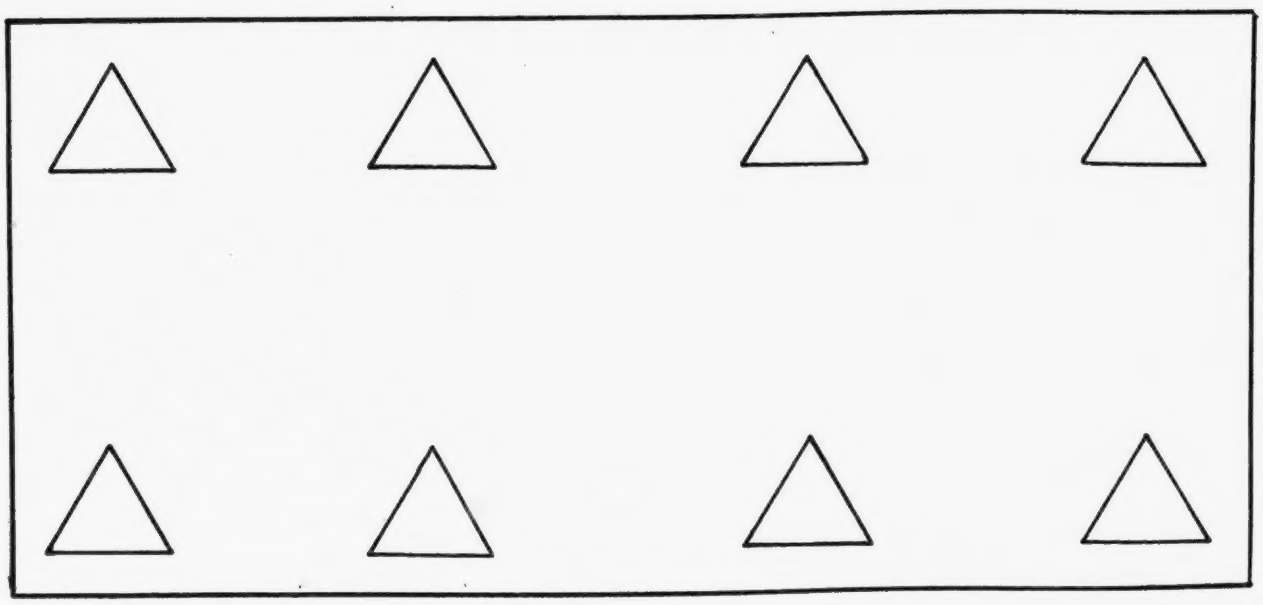
the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

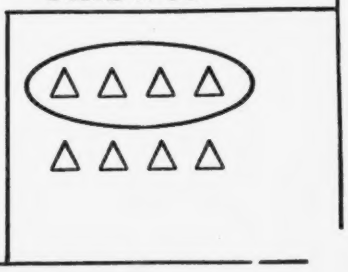
LEVEL C, FRACTIONS (08), SKILL 4

TO THE STUDENT

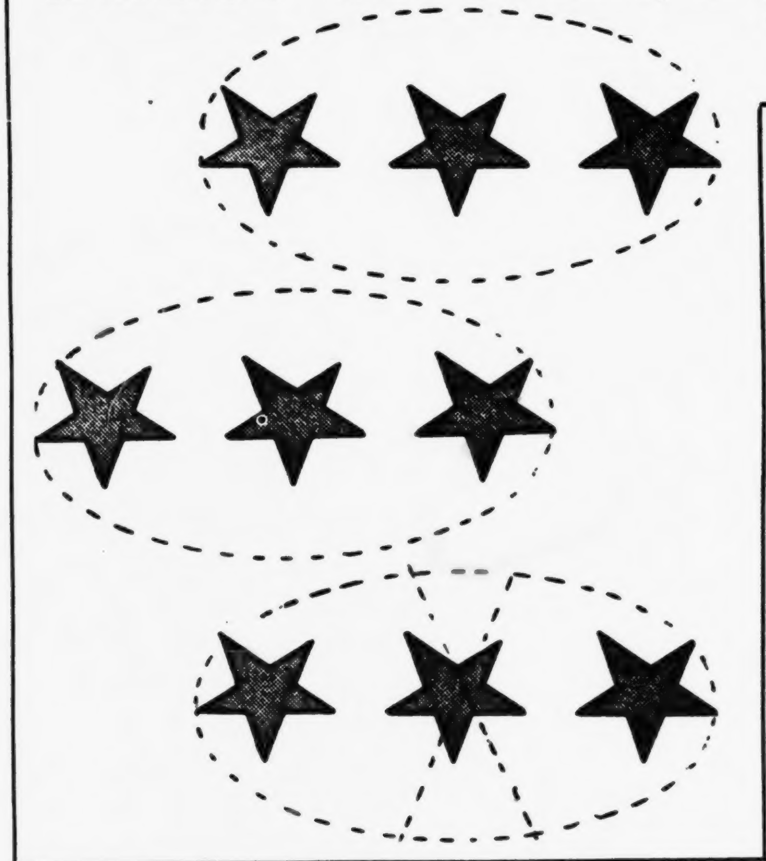
Ring $\frac{1}{2}$ of the set.

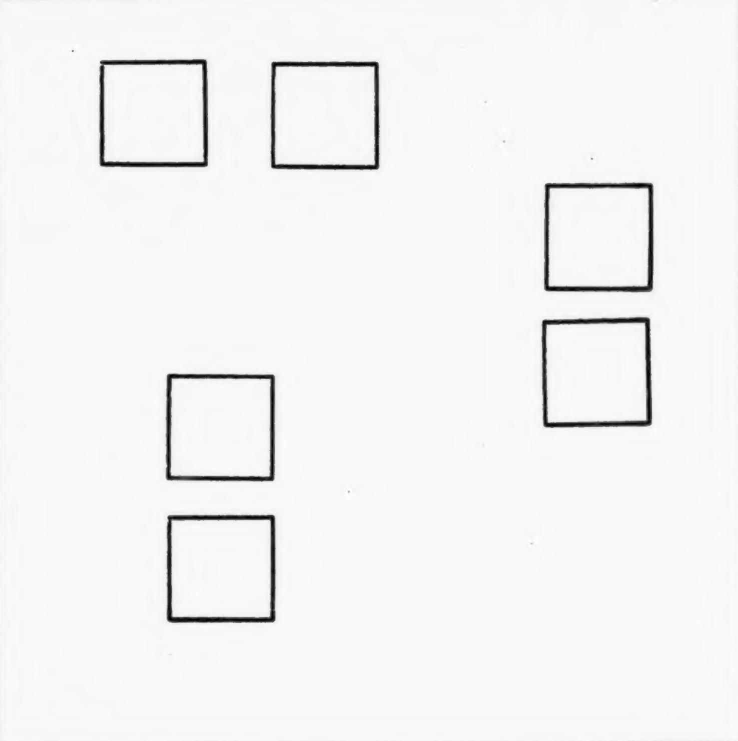


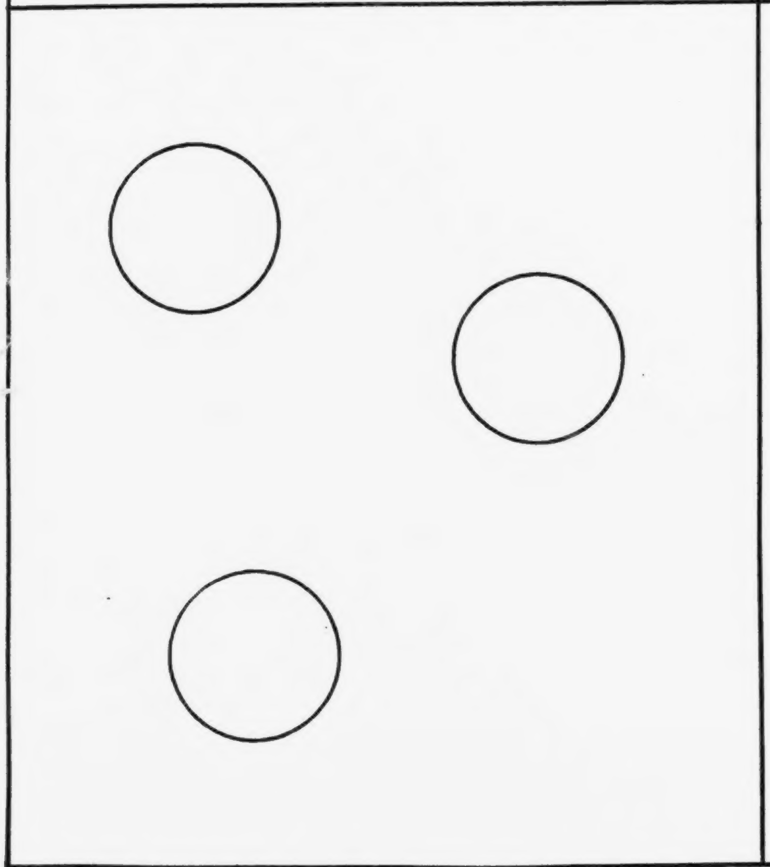
Answer

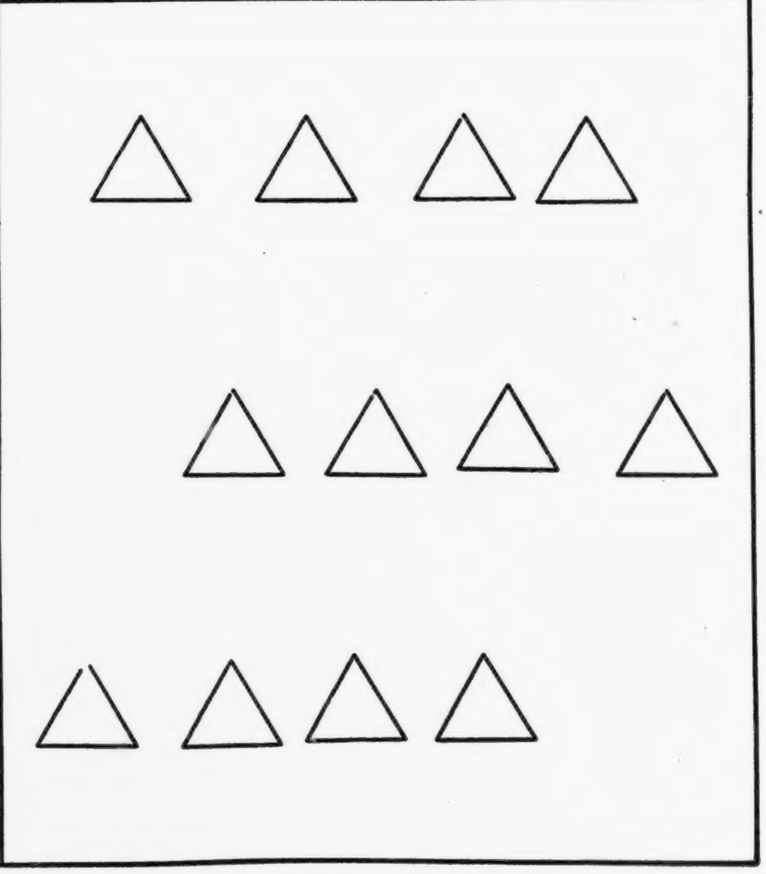


Draw rings to divide each set into 3 parts which are equal in number. Mark one-third, or $\frac{1}{3}$, of each set.







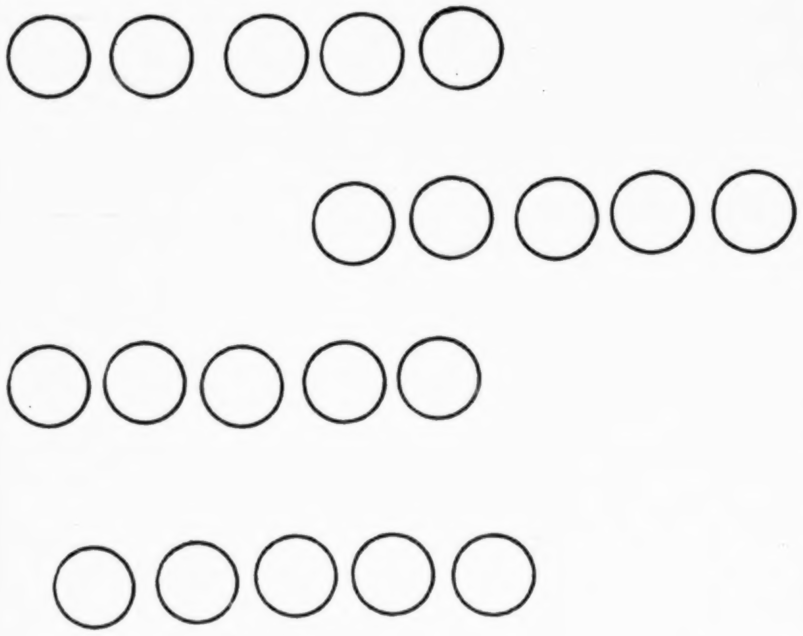


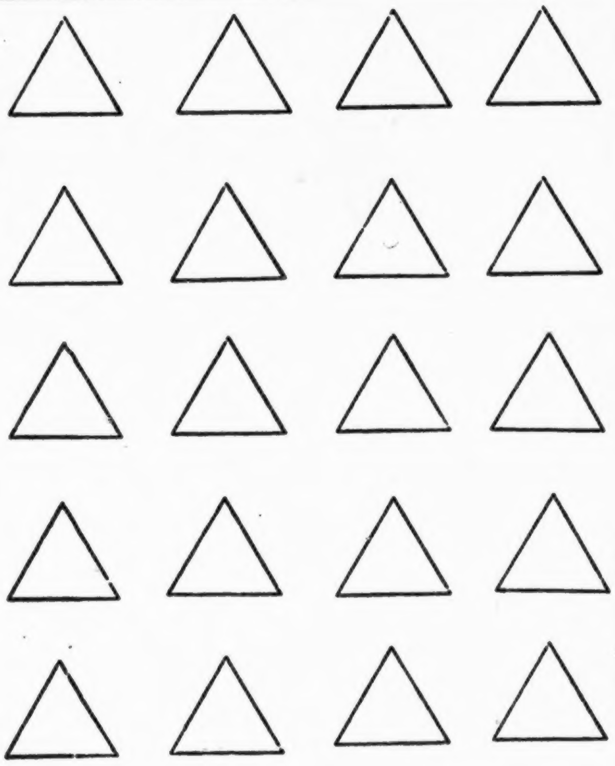
TOTAL POINTS	NUMBER CORRECT
4	

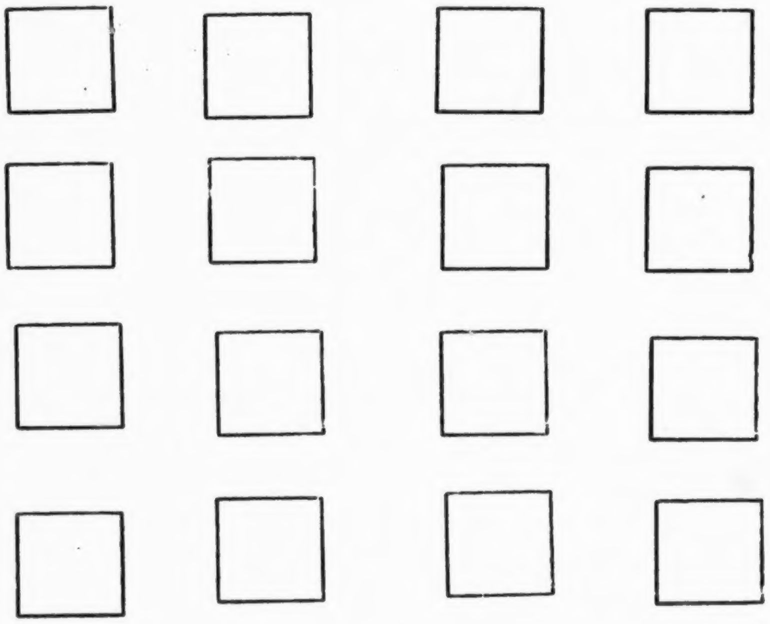
LEVEL	UNIT	SKILL	PAGE
C	08	4	1

Page 2

Draw rings to divide each set into 4 parts which are equal in number. Mark one-fourth, or $\frac{1}{4}$, of each set.





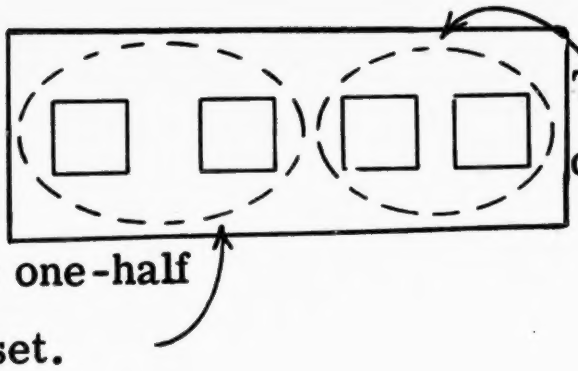


TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
C	08	4	2

Page 3

This is a set of 4 squares.

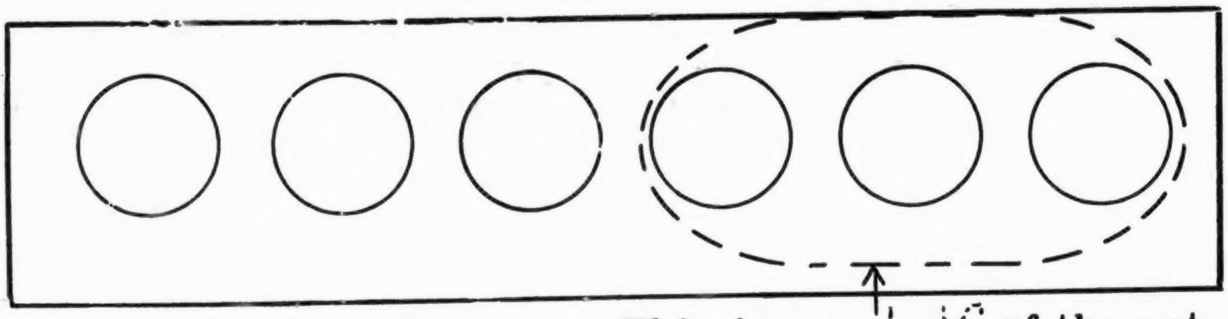


This is one-half of the set.

This is one-half of the set.

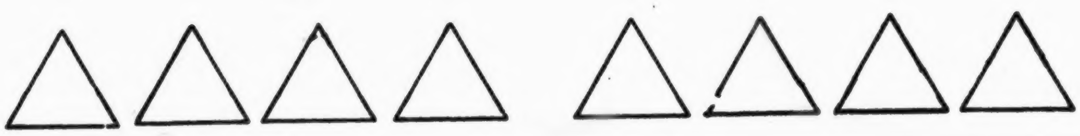
When a set is divided into 2 parts which are equal in number, each part is one-half or $\frac{1}{2}$.

This is a set of 6 circles.



This is one-half of the set.
It is equal in number to the
other half of the set.

Ring one-half, or $\frac{1}{2}$, of this set.

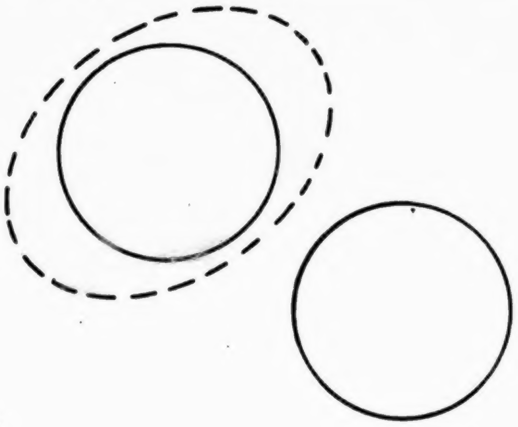


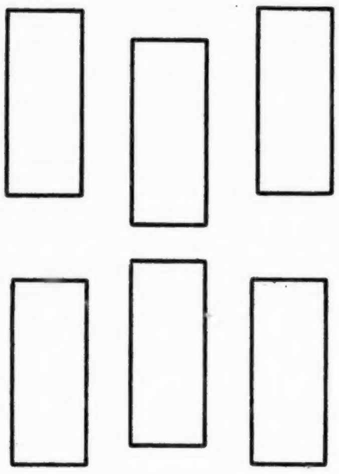
TOTAL POINTS	NUMBER CORRECT
2	

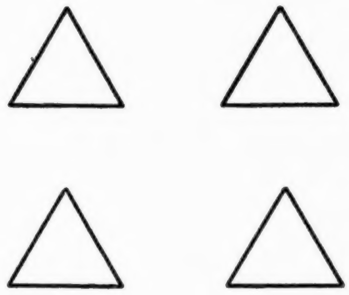
LEVEL	UNIT	SKILL	PAGE
C	08	4	3

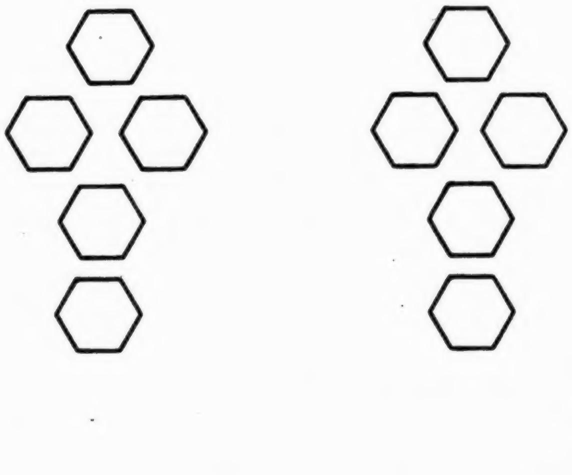
Page 4

Ring $\frac{1}{2}$ of the objects in each set.







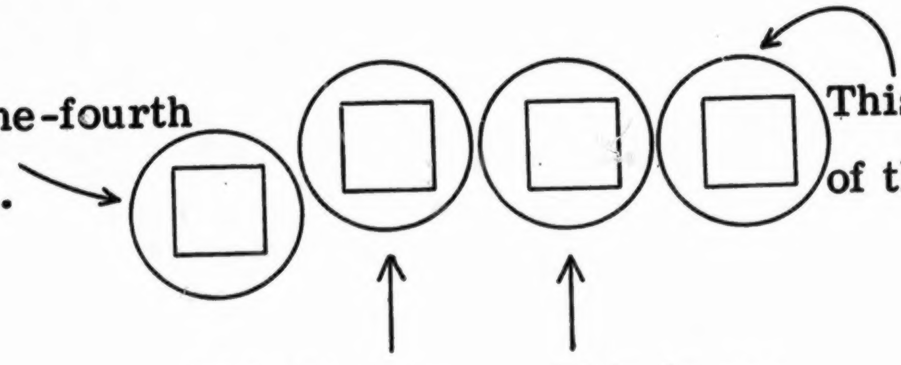


Practice, 16.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	4	4

This is a set of 4 squares.



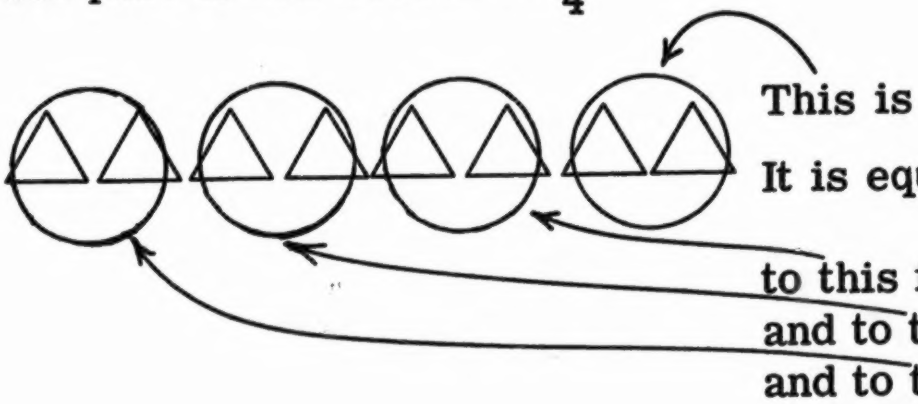
This is one-fourth of the set.

This is one-fourth of the set.

This is one-fourth of the set.

This is one-fourth of the set.

When a set is divided into 4 parts which are equal in number, each part is one-fourth or $\frac{1}{4}$.

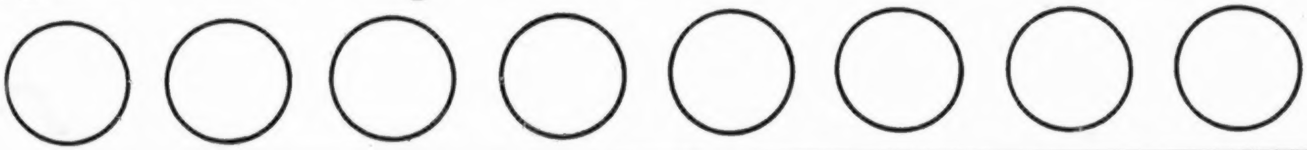


This is one-fourth of the set.
It is equal in number

to this fourth of the set and
and to this fourth
and to this fourth.

All 4 one-fourths in this set have the same number of objects.

Ring one-fourth, or $\frac{1}{4}$, of this set.

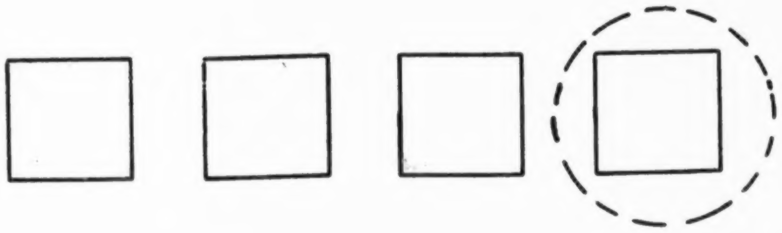


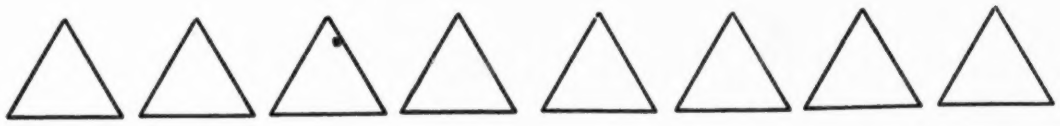
TOTAL POINTS	NUMBER CORRECT
1	

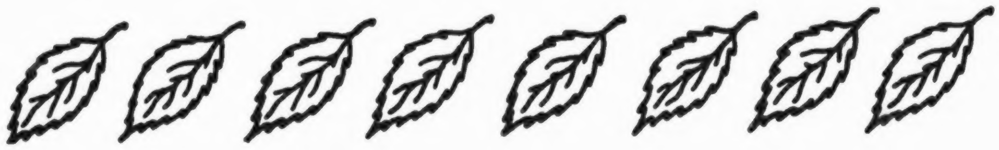
LEVEL	UNIT	SKILL	PAGE
C	08	4	5

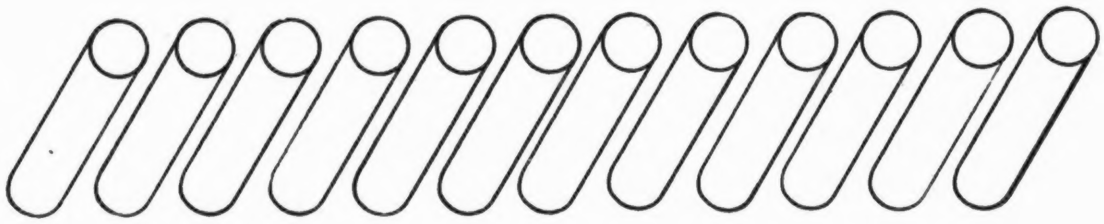
Page 6

Ring $\frac{1}{4}$ of the objects in each set.









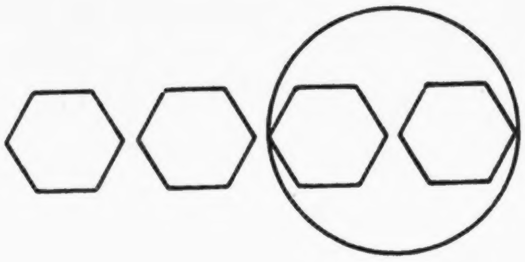
Practice, 17.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	4	6

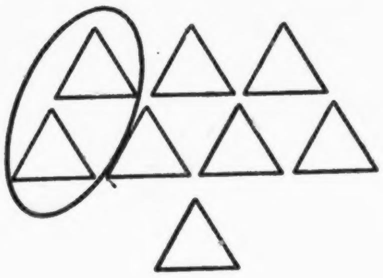
Page 7

Ring the fraction that tells how the set is divided.



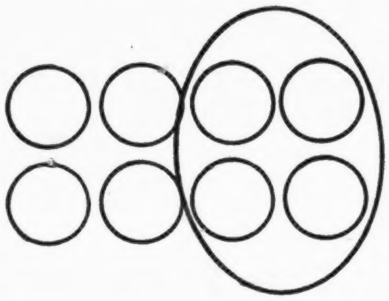
[✓ $\frac{1}{2}$]

$\frac{1}{4}$



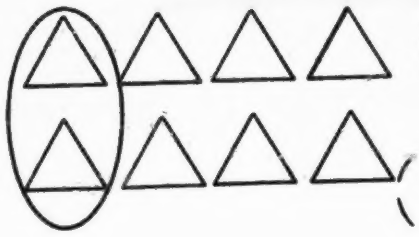
$\frac{1}{2}$

[✓ $\frac{1}{4}$]



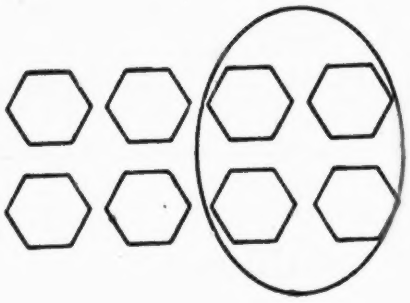
[✓ $\frac{1}{2}$]

$\frac{1}{4}$



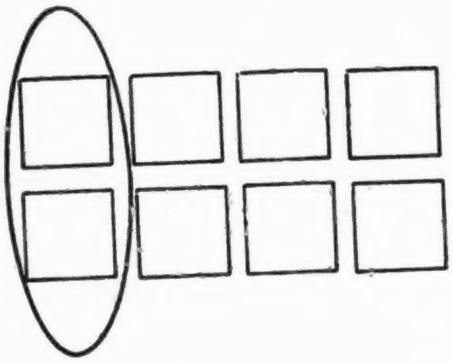
$\frac{1}{2}$

[✓ $\frac{1}{4}$]



$\frac{1}{2}$

$\frac{1}{4}$



$\frac{1}{2}$

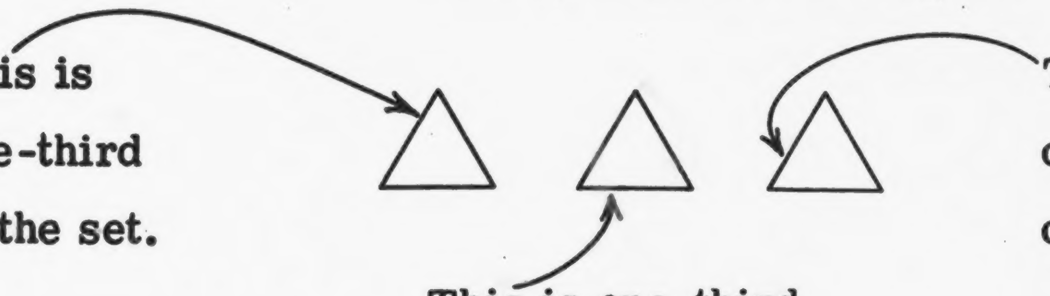
$\frac{1}{4}$

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
C	08	4	7

Page 8

This is a set of 3 triangles.

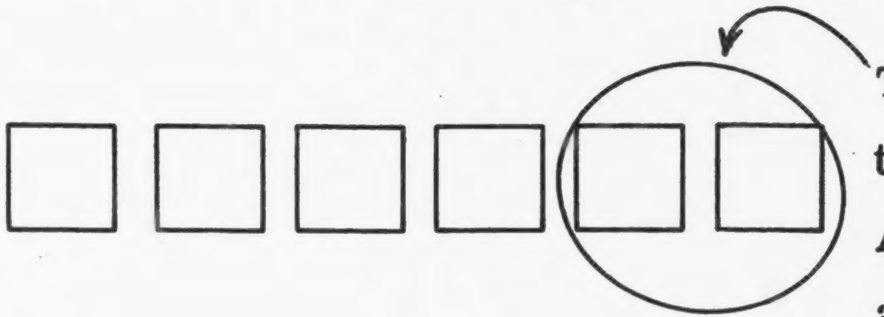


This is one-third of the set.

This is one-third of the set.

This is one-third of the set.

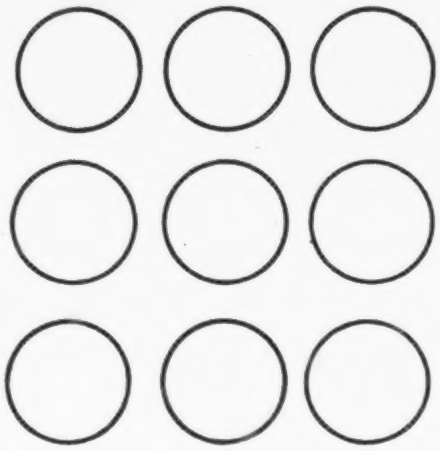
When a set is divided into 3 parts which are equal in number, each part is one-third or $\frac{1}{3}$.



This is one-third of the set.

All 3 thirds in this set are equal in number.

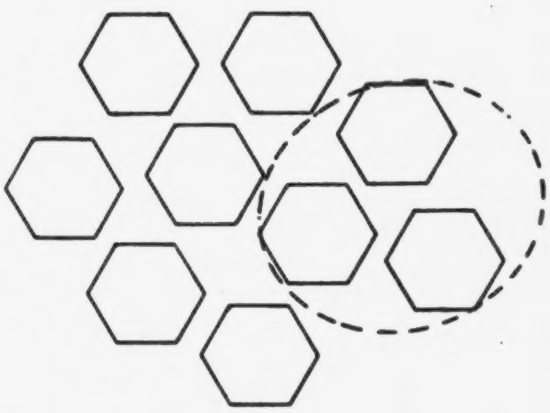
Ring one-third, or $\frac{1}{3}$, of this set.

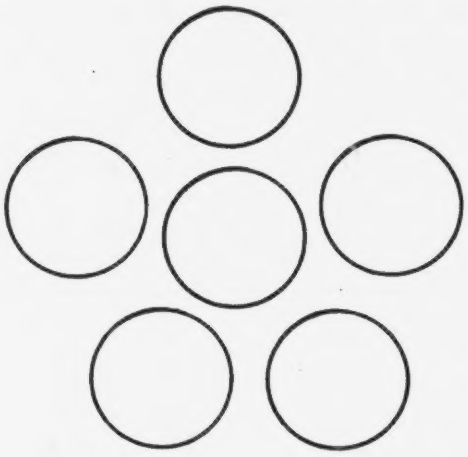


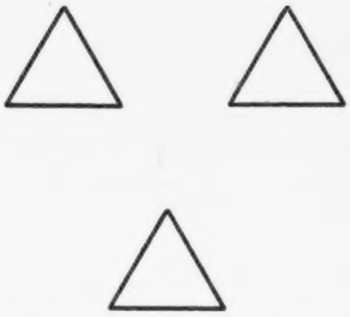
TOTAL POINTS	NUMBER CORRECT
1	

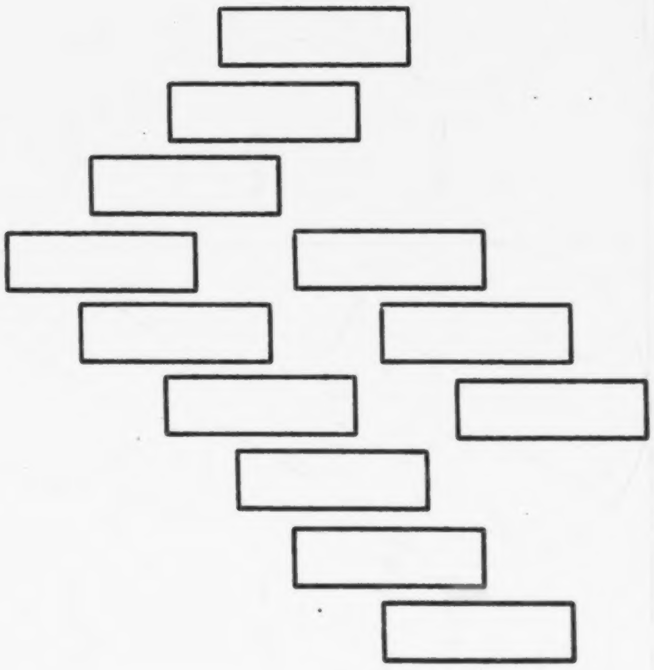
LEVEL	UNIT	SKILL	PAGE
C	08	4	8

Ring $\frac{1}{3}$ of the objects in each set.







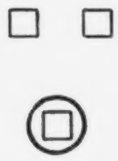


Practice, 18.

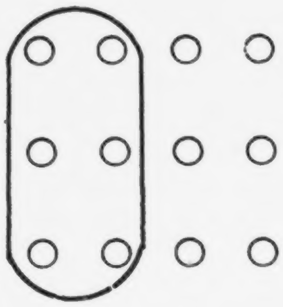
TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	4	9

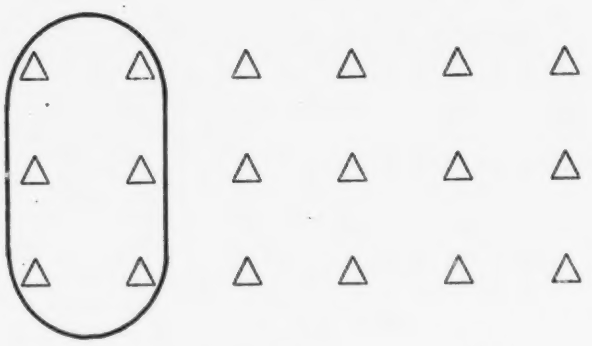
Mark the fraction that describes the circled part of each set.



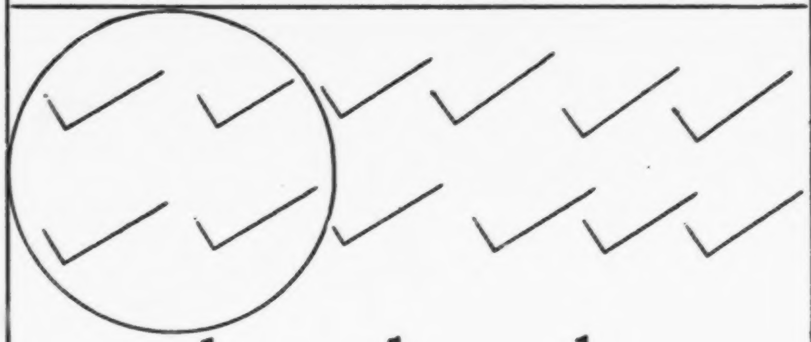
$\frac{1}{2}$ $\cancel{\frac{1}{3}}$ $\frac{1}{4}$



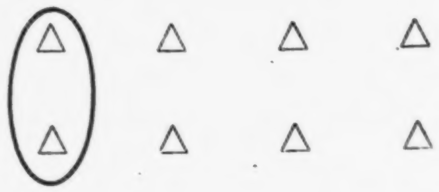
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



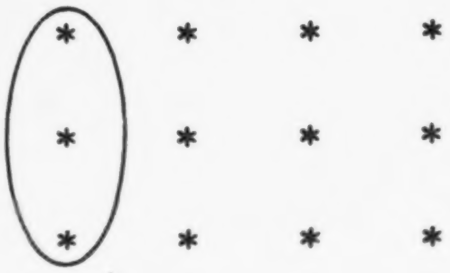
$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$



$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$



$\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$

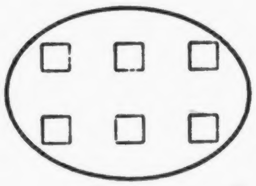


$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$

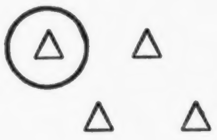
TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
C	08	4	10

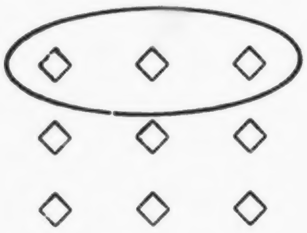
Mark the fraction that tells how the set is divided.



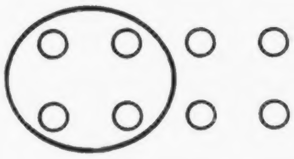
$\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$



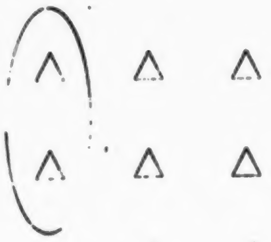
$\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$



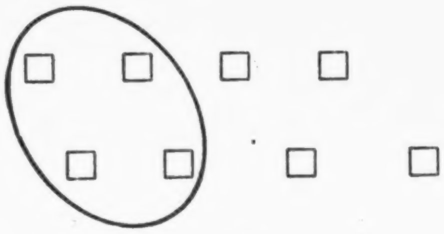
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$



$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$



$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$

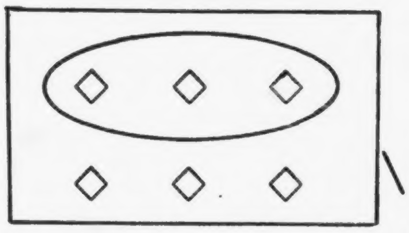
Practice, 19.

TOTAL POINTS	NUMBER CORRECT
6	

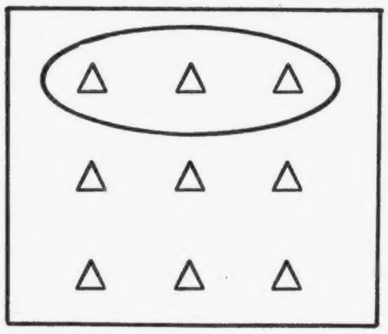
LEVEL	UNIT	SKILL	PAGE
C	08	4	11

Page 12

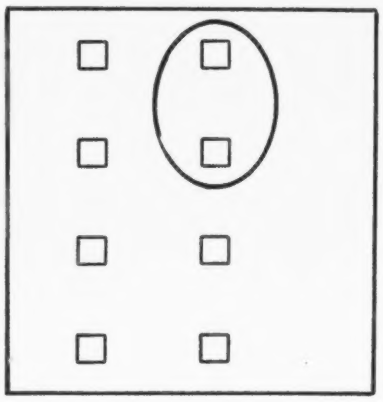
Match.



$\frac{1}{4}$



$\frac{1}{3}$



$\frac{1}{2}$

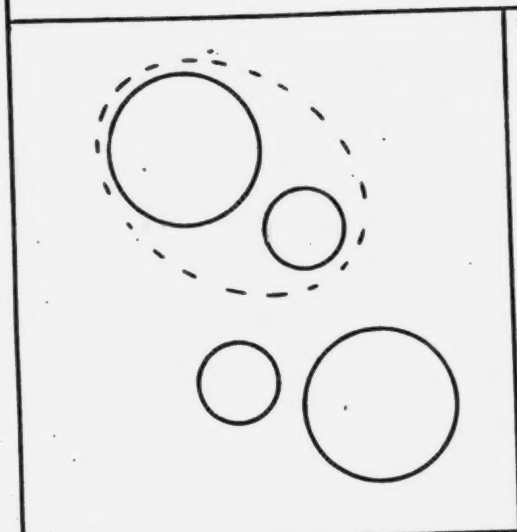
Practice, 20.

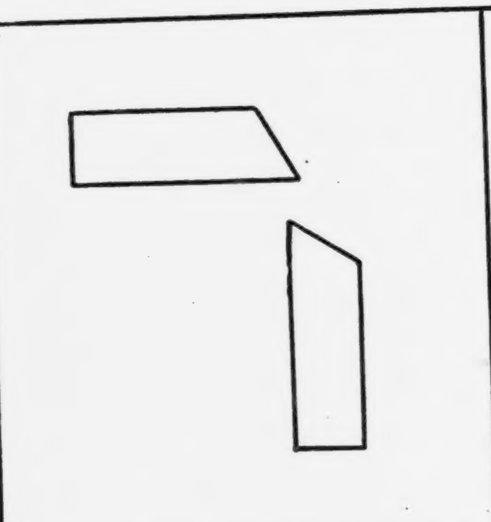
TOTAL POINTS	NUMBER CORRECT
3	

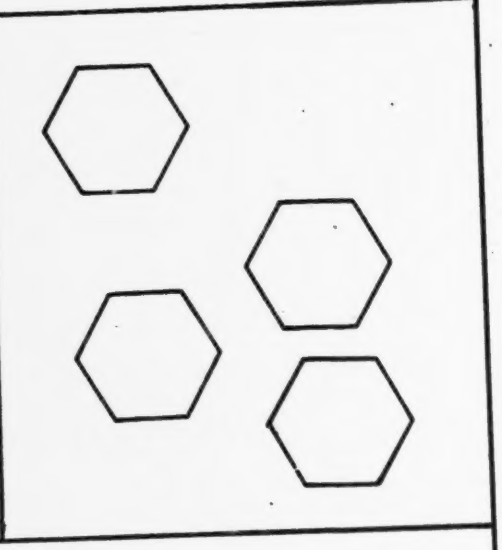
LEVEL	UNIT	SKILL	PAGE
C	08	4	12

Page 13

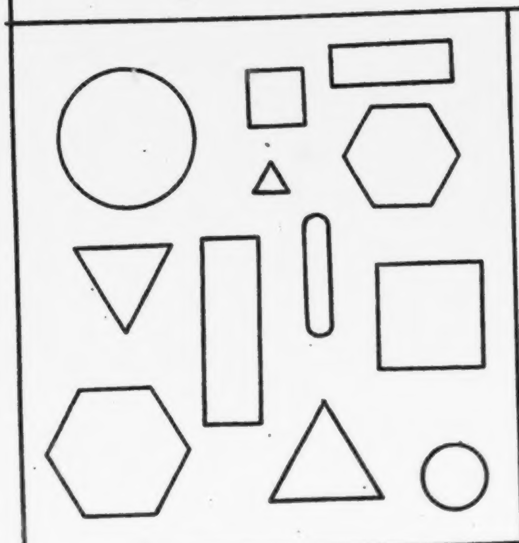
Ring $\frac{1}{2}$ of the objects in each set below.

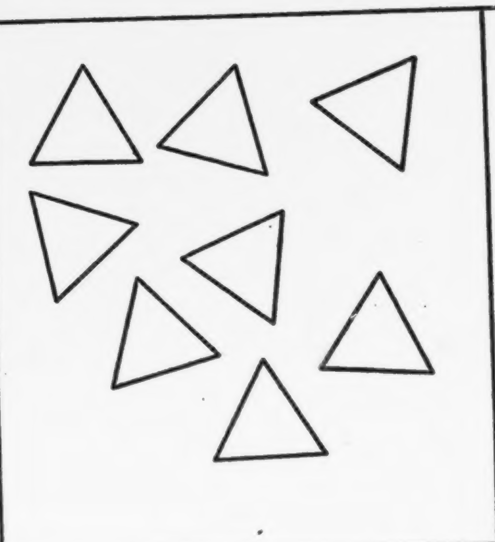


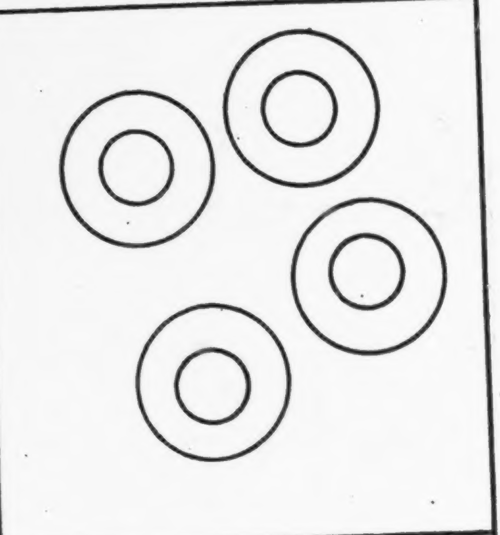




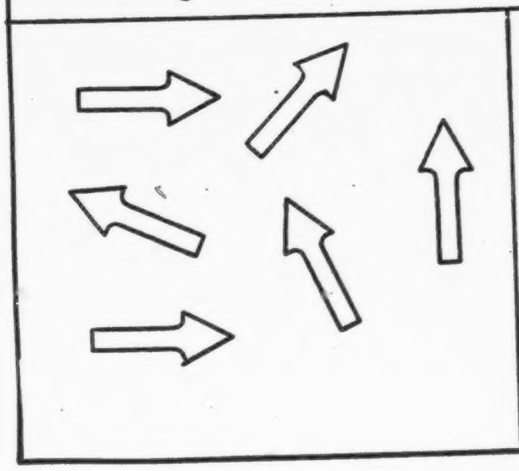
Ring $\frac{1}{4}$ of the objects in each set below.

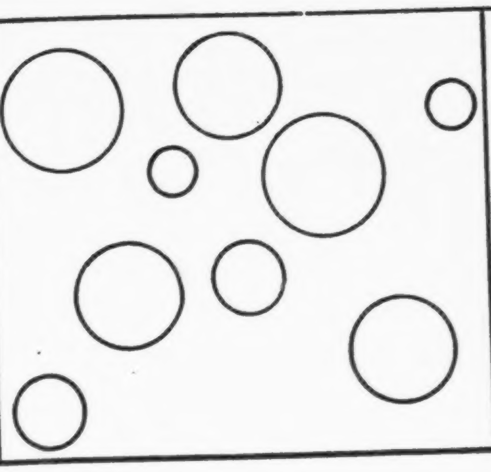


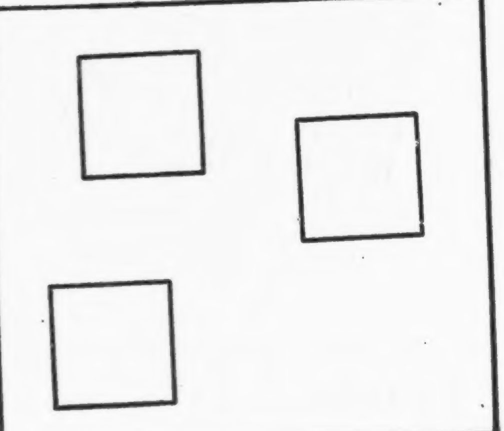




Ring $\frac{1}{3}$ of the objects in each set below.





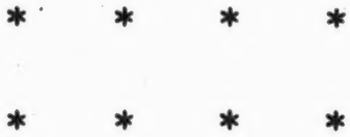


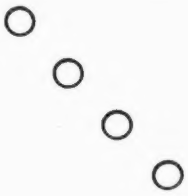
TOTAL POINTS	NUMBER CORRECT
9	

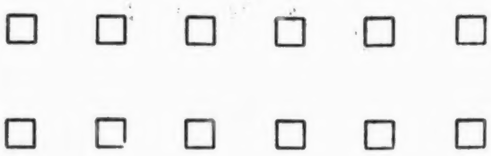
LEVEL	UNIT	SKILL	PAGE
C	08	4	13

Page 14

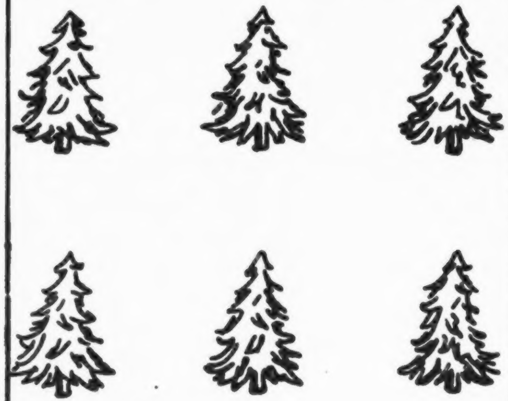
Ring $\frac{1}{4}$ of the objects in each set.

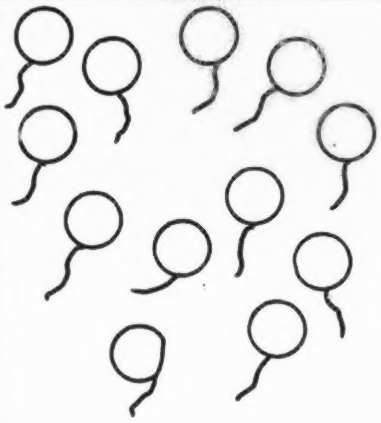


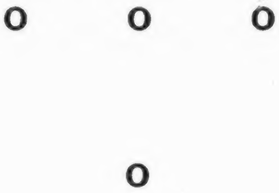




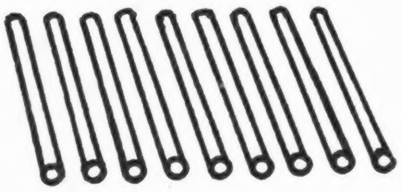
Ring $\frac{1}{2}$ of the objects in each set.

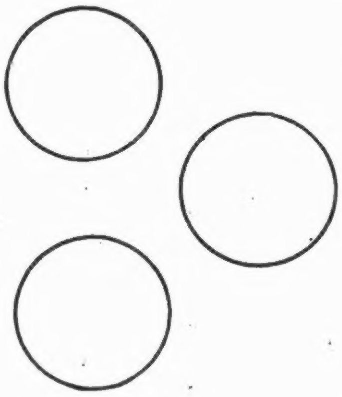


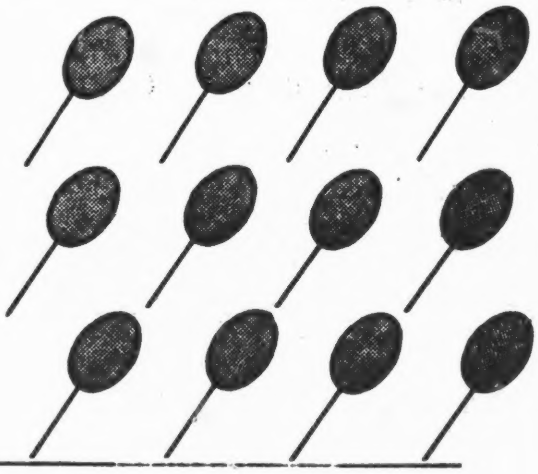




Ring $\frac{1}{3}$ of the objects in each set.







Practice, 21.

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
C	08	4	14

CET I

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Ring $\frac{1}{2}$ of the set.

○ ○ ○

○ ○ ○

Ring $\frac{1}{4}$ of the set.

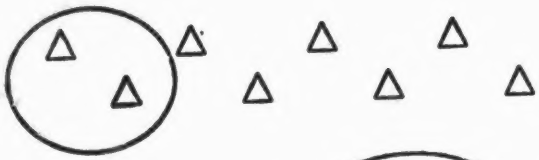
□ □ □ □

Ring $\frac{1}{3}$ of the set.

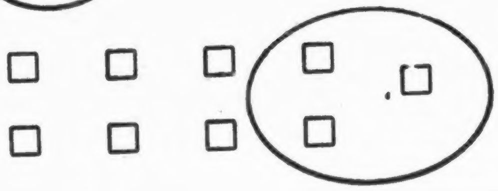
◇ ◇ ◇ ◇ ◇

◇ ◇ ◇ ◇

Ring the correct fraction.



$\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$

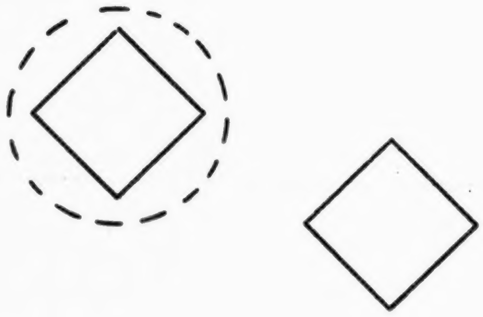


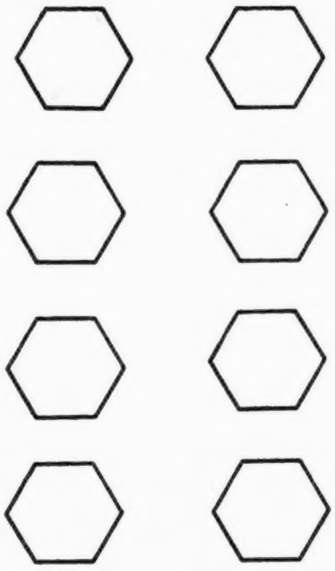
$\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{3}$

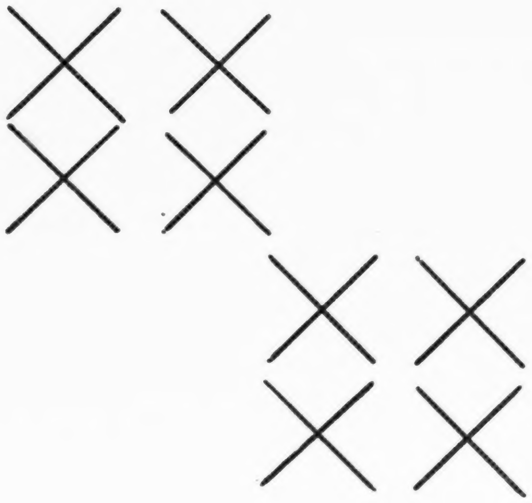
LEVEL	UNIT	SKILL	PAGE
C	08	4	15

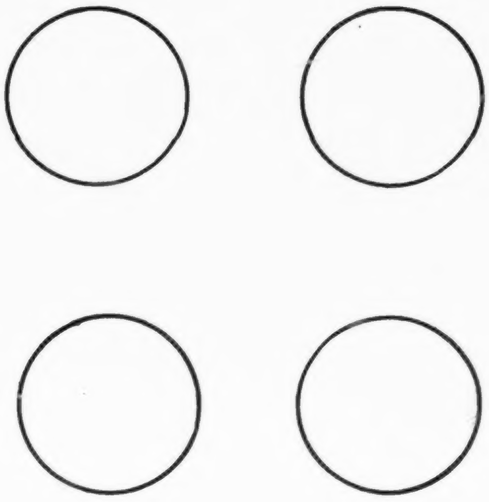
Page 16

Ring $\frac{1}{2}$ of the objects in each set.







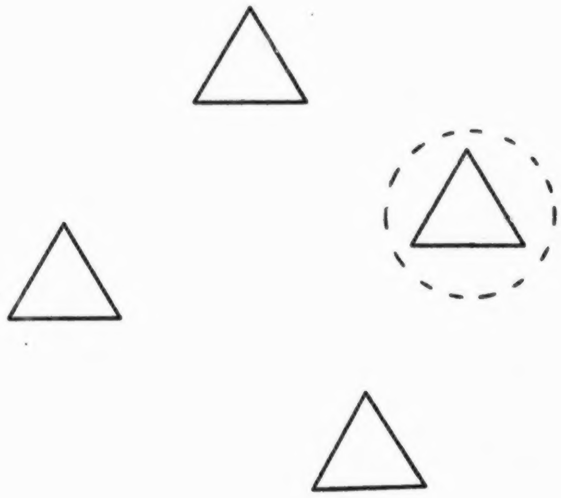


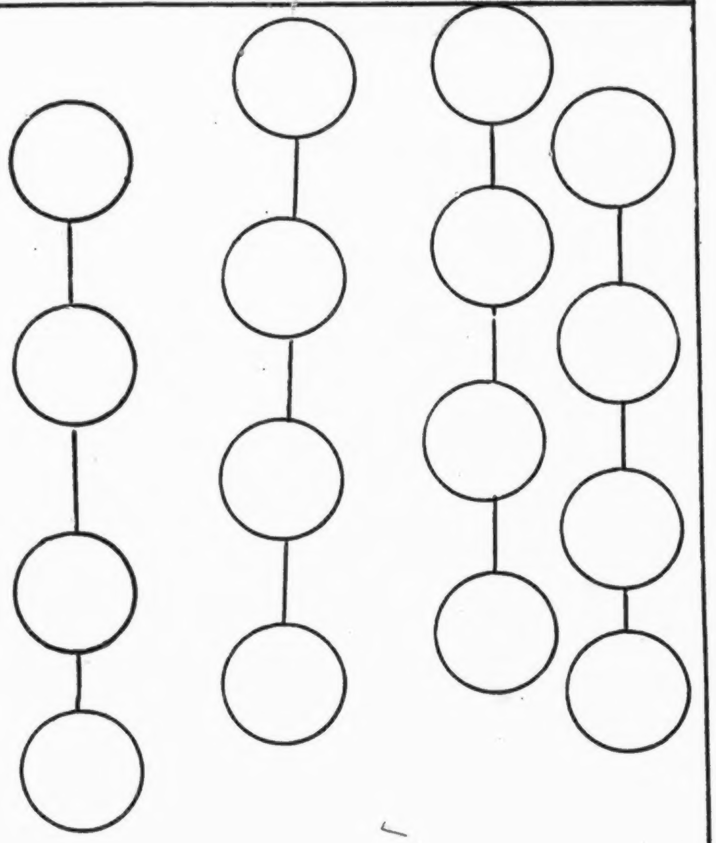
TOTAL POINTS	NUMBER CORRECT
4	

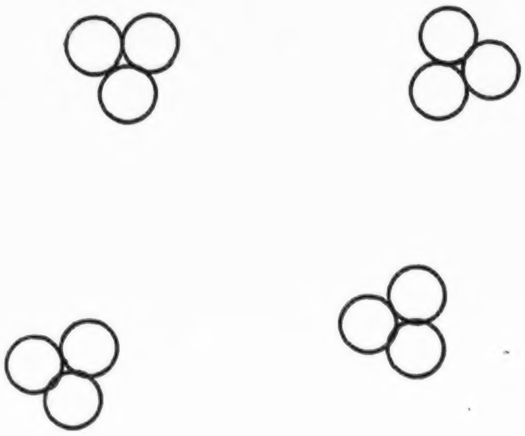
LEVEL	UNIT	SKILL	PAGE
C	08	4	16

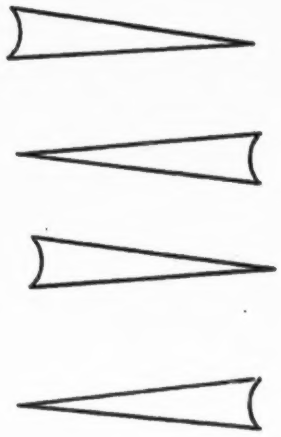
Page 17

Ring $\frac{1}{4}$ of the objects in each set.







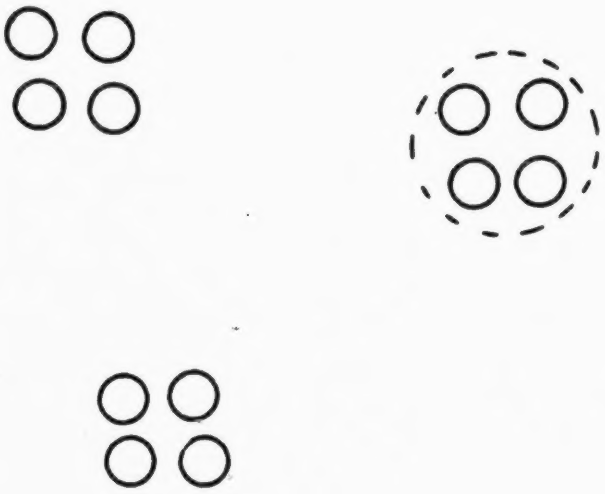


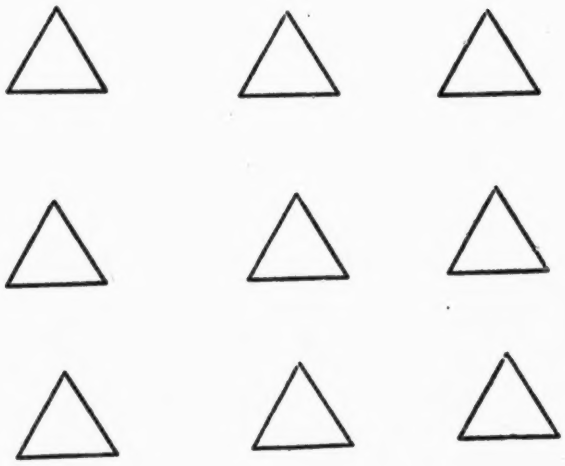
TOTAL POINTS	NUMBER CORRECT
4	

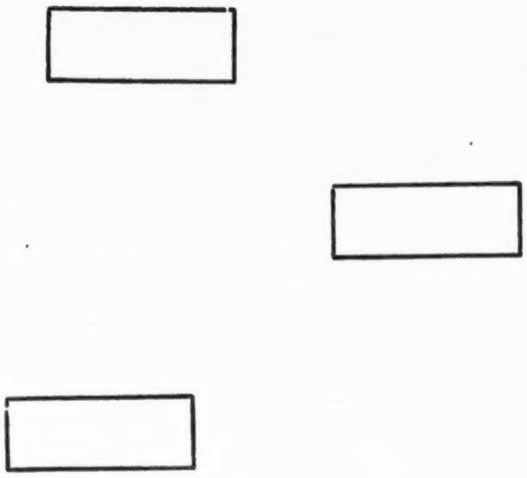
LEVEL	UNIT	SKILL	PAGE
C	08	4	17

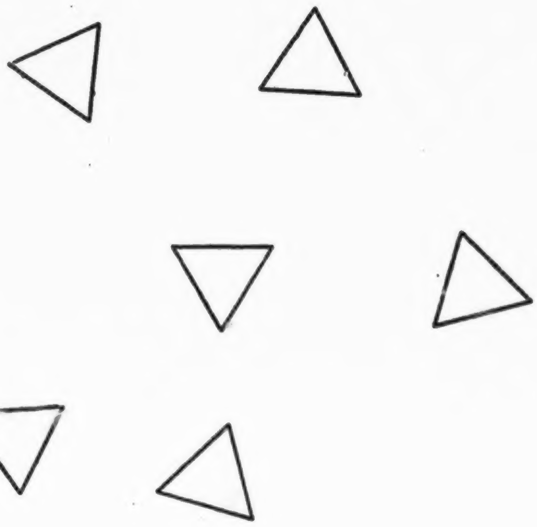
Page 18

Ring $\frac{1}{3}$ of the objects in each set.







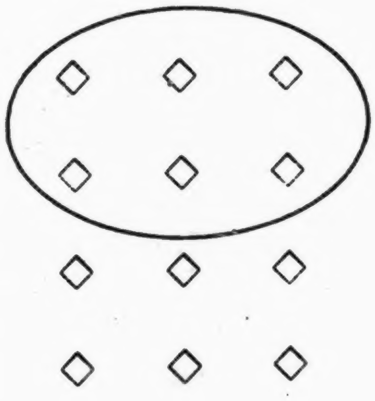


TOTAL POINTS	NUMBER CORRECT
4	

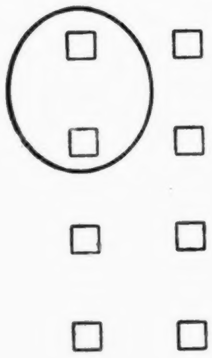
LEVEL	UNIT	SKILL	PAGE
C	08	4	18

Page 19

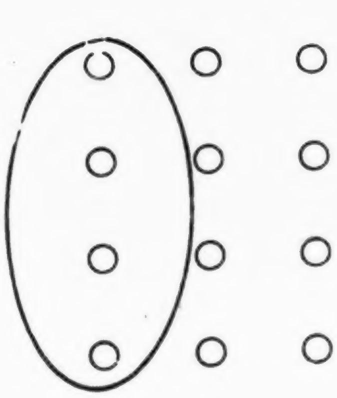
Mark the fraction that tells how the set is divided.



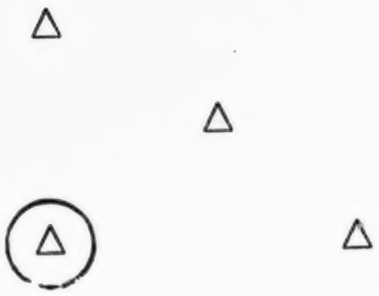
$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$



$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$



$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$

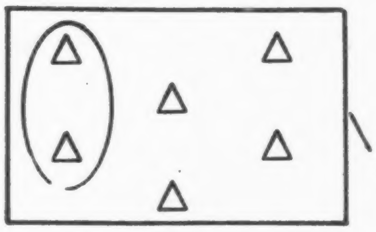


$\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$

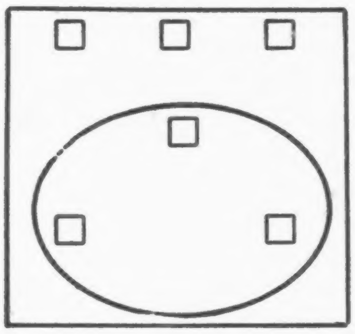
TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
C	08	4	19

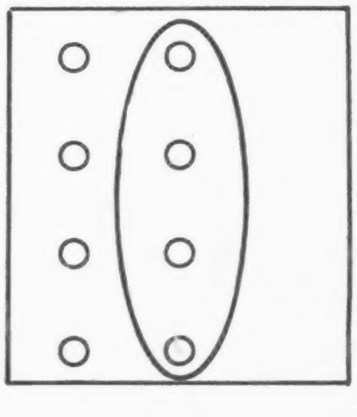
Match.



$\frac{1}{2}$



$\frac{1}{4}$



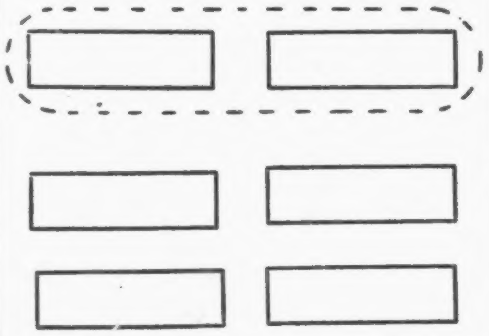
$\frac{1}{3}$

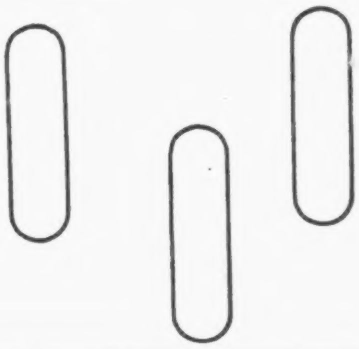
TOTAL POINTS	NUMBER CORRECT
3	

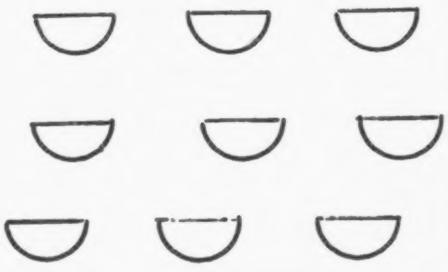
LEVEL	UNIT	SKILL	PAGE
C	08	4	20

Page 21

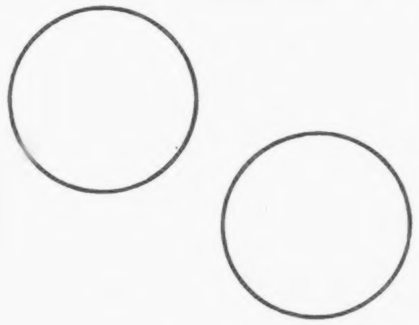
Ring $\frac{1}{3}$ of each set below.

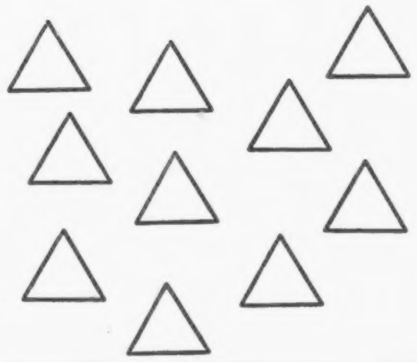


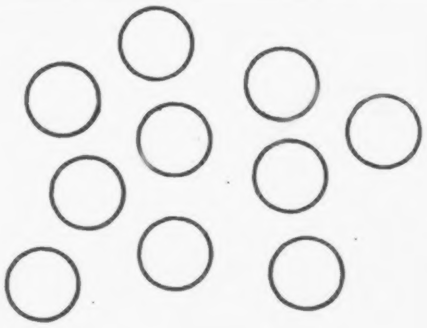




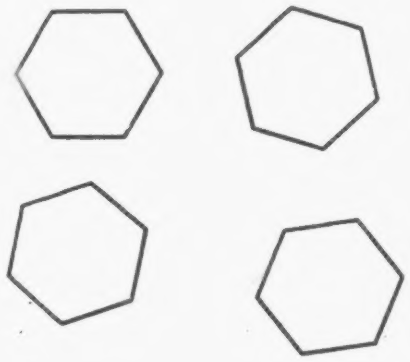
Ring $\frac{1}{2}$ of each set below.

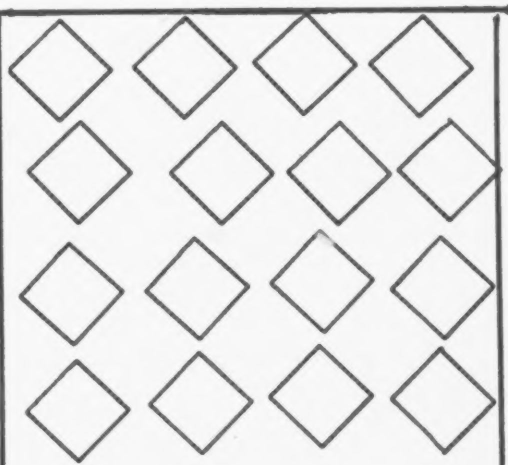


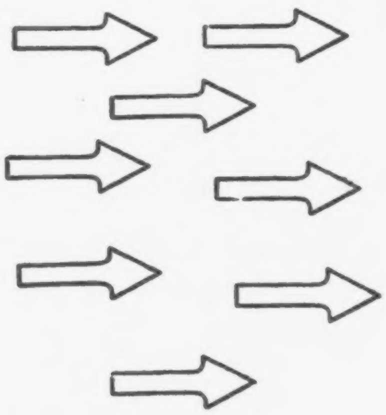




Ring $\frac{1}{4}$ of each set below.







TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
C	08	4	21

CET II

TL. PTS.	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Ring $\frac{1}{3}$ of the set.

□ □ □

□ □ □

Ring $\frac{1}{2}$ of the set.

○ ○ ○ ○ ○

○ ○ ○ ○ ○

Ring $\frac{1}{4}$ of the set.

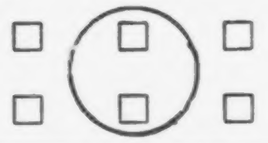
△ △ △

△ △ △

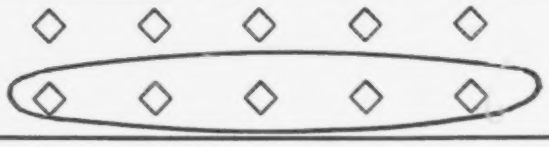
△ △ △

△ △ △

Ring the correct fractions.



$\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$



$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{3}$

LEVEL	UNIT	SKILL	PAGE
C	08	4	22

LEVEL C, FRACTIONS, SKILL 4

OBJECTIVE: Draws a circle around $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{1}{4}$ of a set of objects and selects the fraction which describes the circled part of a given set.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Divides set into thirds.	
2.	Divides set into fourths.	
3.	Rings half of a set of objects.	
4.	Rings half of a set of objects.	16
5.	Rings one-fourth of a set of objects.	
6.	Rings one-fourth of a set of objects.	17
7.	Draws a ring around the fraction that describes circled portion of picture; 1/4 or 1/2.	
8.	Rings one-third of a set of objects.	
9.	Rings one-third of a set of objects.	18
10.	Marks the fraction that describes circled portion of picture; 1/4, 1/2, or 1/3.	
11.	Marks the fraction that describes circled portion of picture; 1/4, 1/2, or 1/3.	19
12.	Matches the circled portion of a set with a fraction.	20
13.	Rings one-half, one-third, or one-fourth of the objects in each set.	
14.	Rings one-half, one-third, or one-fourth of the objects in each set.	21
15.	CET I.	22
	CET II.	

Teaching Aids:

- Numbers and fractions (Instructo)
- Fractional parts of circles and squares
- Felt kit (Ideal)
- Homemade paper fractional parts in tin box
- Felt fractional parts in tin box
- Fractions Made Easy (Ideal)
- Fraction Wheel (Ideal)
- Fractions Are as Easy as Pie (M. Bradley)

Circle pages that are to be done.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP ____________

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud.pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C	3	1			4	3				
			9			4	4				
			12			9	9				
2-12	C.J.C.	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
DATES		2-1							

P1 — 1968

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen STUDENT NUMBER 0976 UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C	3		03	Teacher pg. 4		4				
2-12	C.J.C	3	13	C.E.T.				6/6	100	1/2	50
2-15	C.J.C	4	1		read stud. pg.						
			4								
			8								
			9								

These are the three skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Divide sets into 1/4, 1/3 1/2 and write the fractions.

Joe cannot:

Based on your analysis of Joe's work you decide to:

____ Extend prescription for the same skill.

____ Assign a second CET for the same skill

__X__ Assign entire CET for Skill __4__.

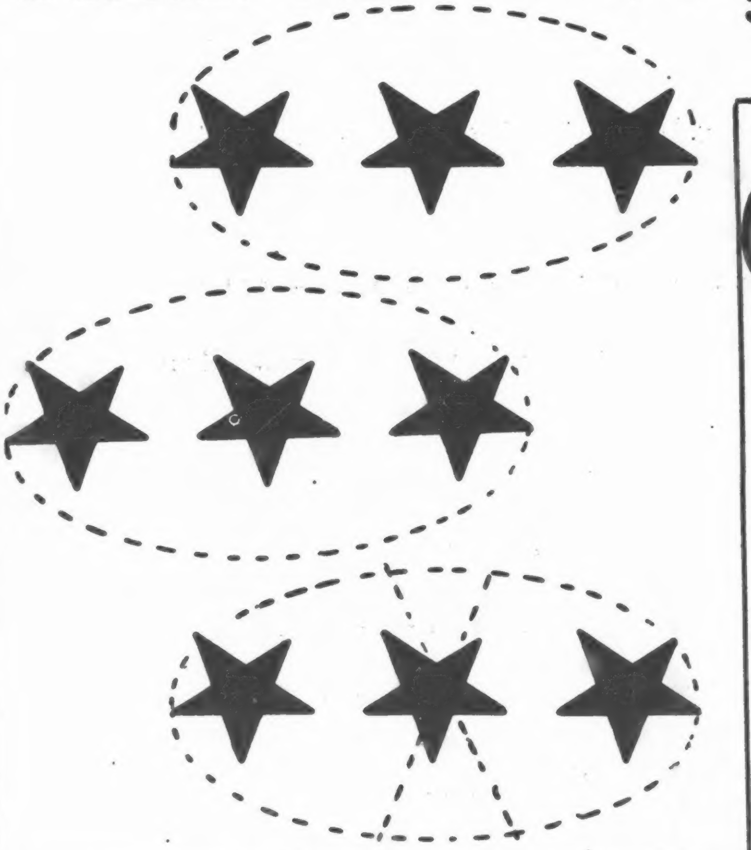
Why? Joe's performance on these sheets indicates mastery of Skill 4.

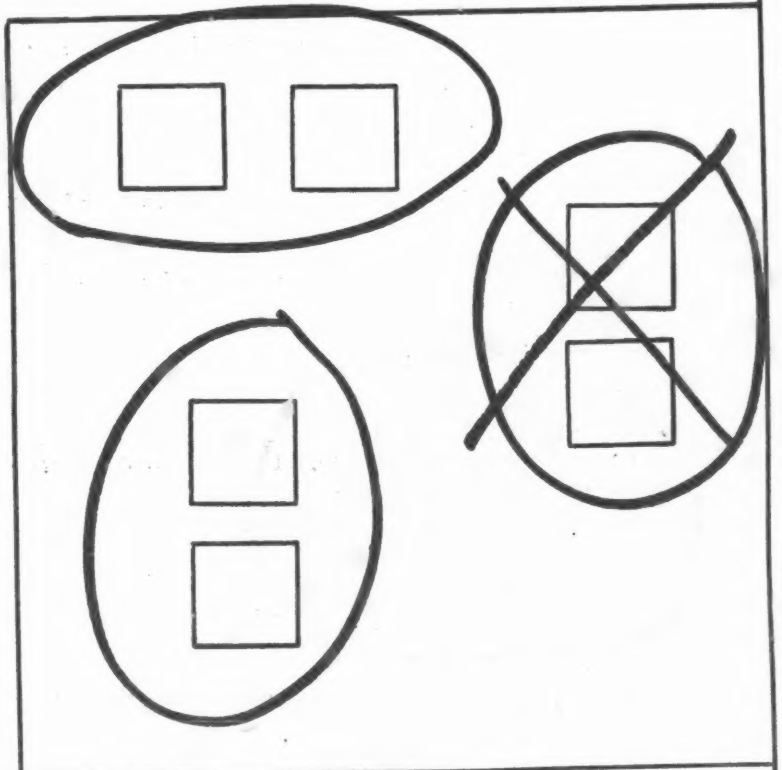
Based on your diagnosis of Joe's behavior, his performance on the Pre-test (Skill 4, in particular) and on these skill sheets, you decide to prescribe the following on 2/16:

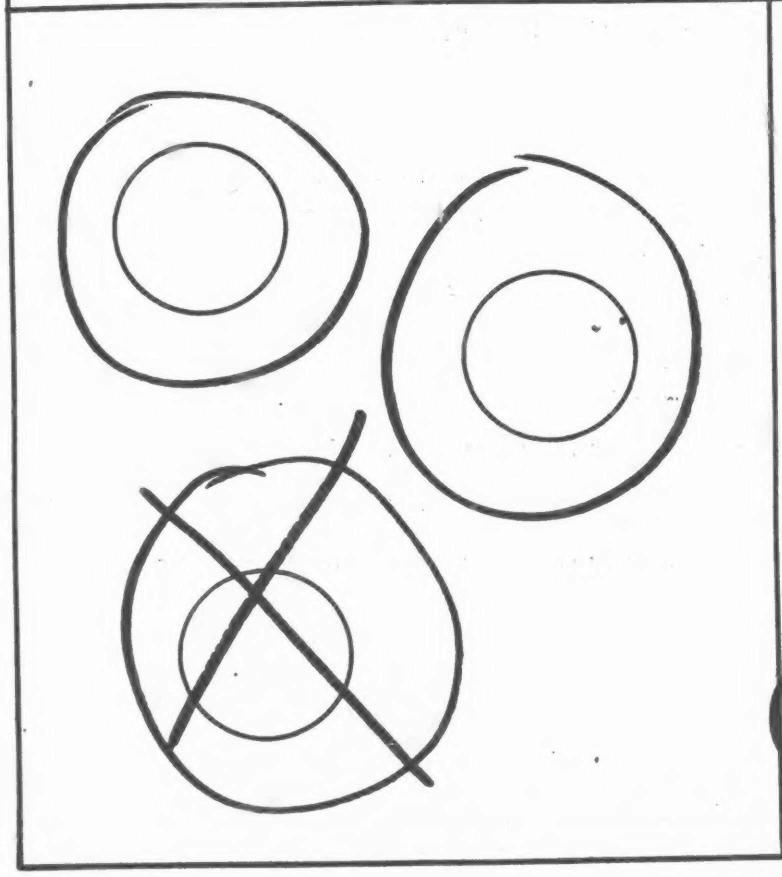
Page	Reason
15	CET to test mastery of Skill 4

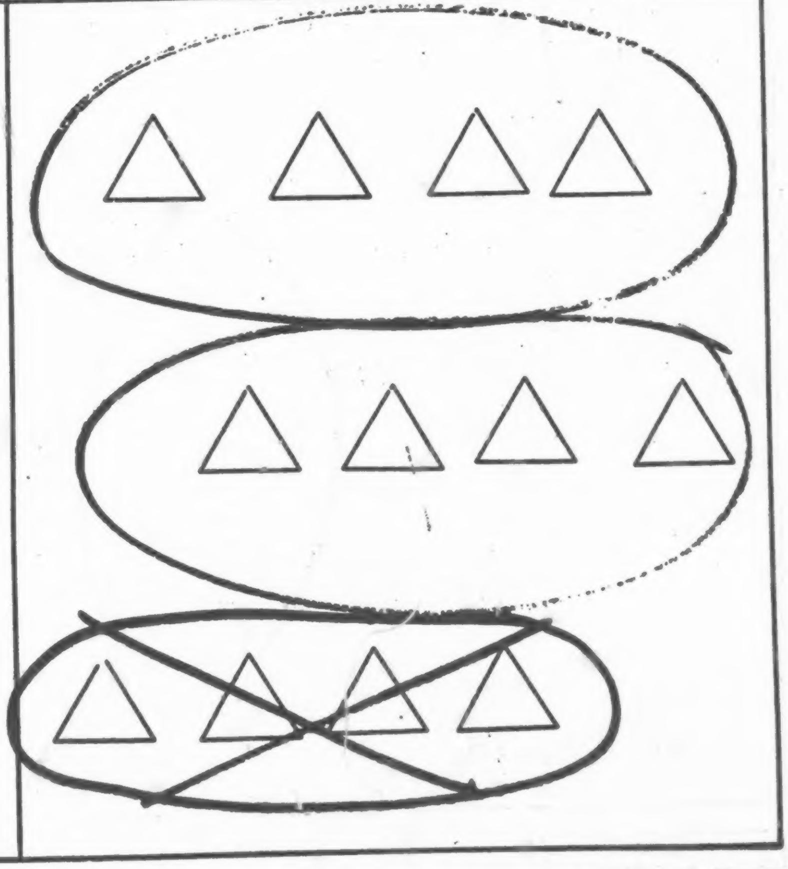
After you recheck this CET, you record the page number and the date on Joe's Prescription Sheet.

Draw rings to divide each set into 3 parts which are equal in number. Mark one-third, or $\frac{1}{3}$, of each set.





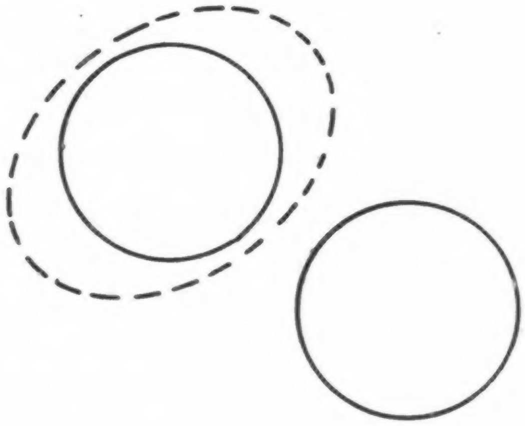


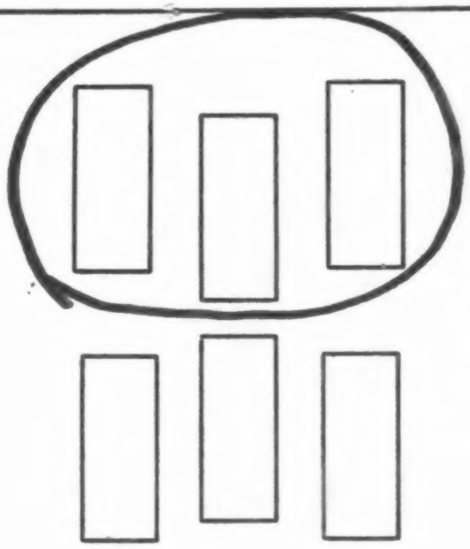


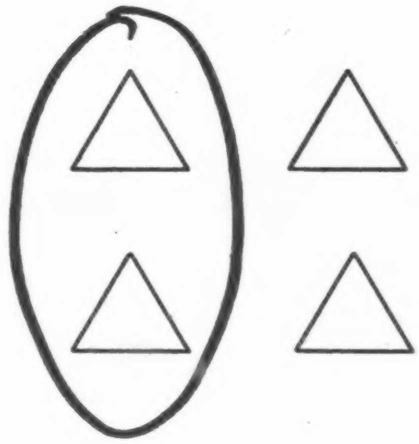
TOTAL POINTS	NUMBER CORRECT
4	4

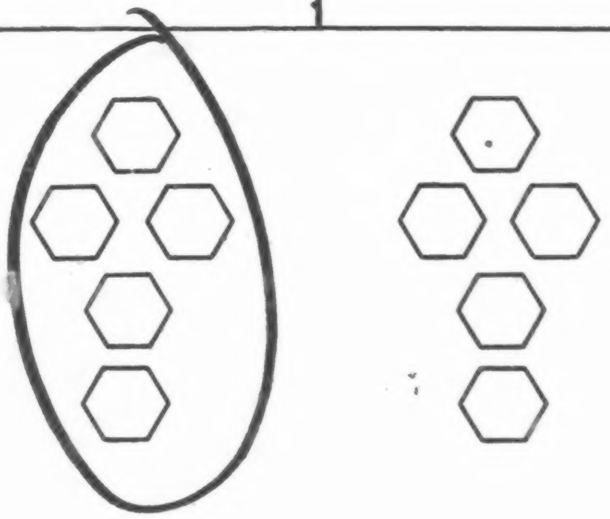
LEVEL	UNIT	SKILL	PAGE
C	08	4	1

Ring $\frac{1}{2}$ of the objects in each set.







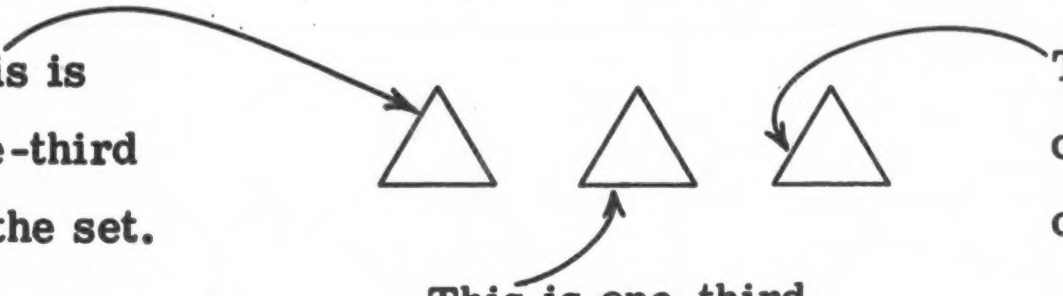


Practice, 16.

TOTAL POINTS	NUMBER CORRECT
4	4

LEVEL	UNIT	SKILL	PAGE
C	08	4	4

This is a set of 3 triangles.

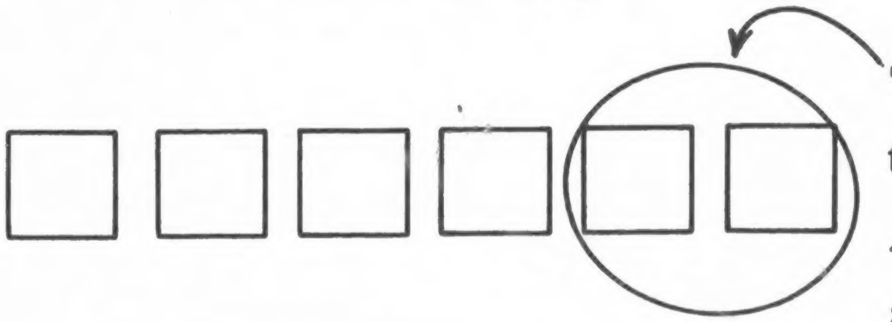


This is one-third of the set.

This is one-third of the set.

This is one-third of the set.

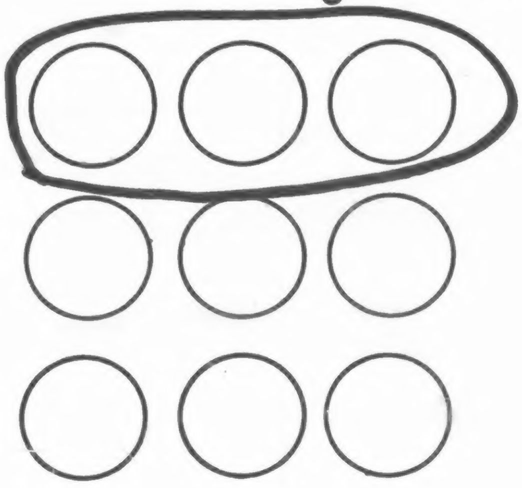
When a set is divided into 3 parts which are equal in number, each part is one-third or $\frac{1}{3}$.



This is one-third of the set.

All 3 thirds in this set are equal in number.

Ring one-third, or $\frac{1}{3}$, of this set.

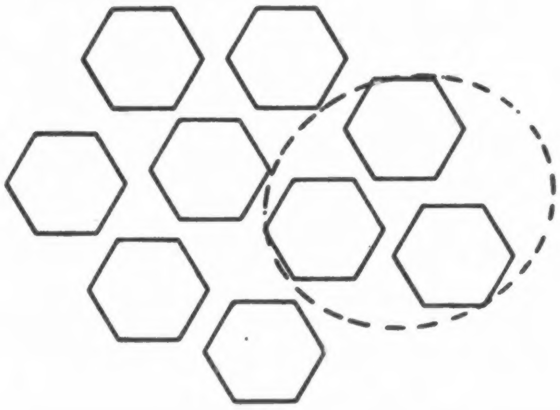


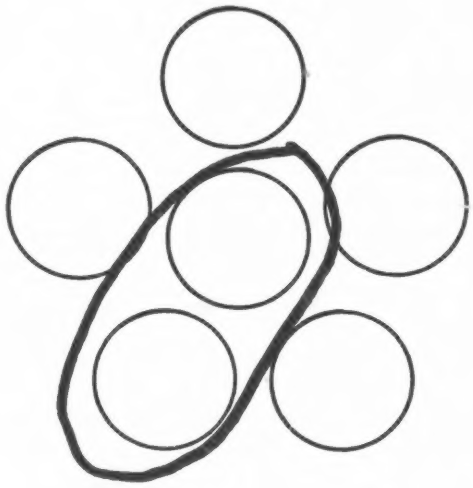
TOTAL POINTS	NUMBER CORRECT
1	1

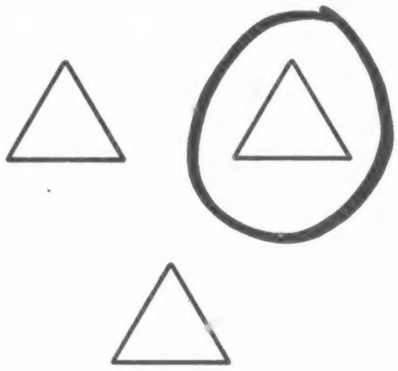
LEVEL	UNIT	SKILL	PAGE
C	08	4	8

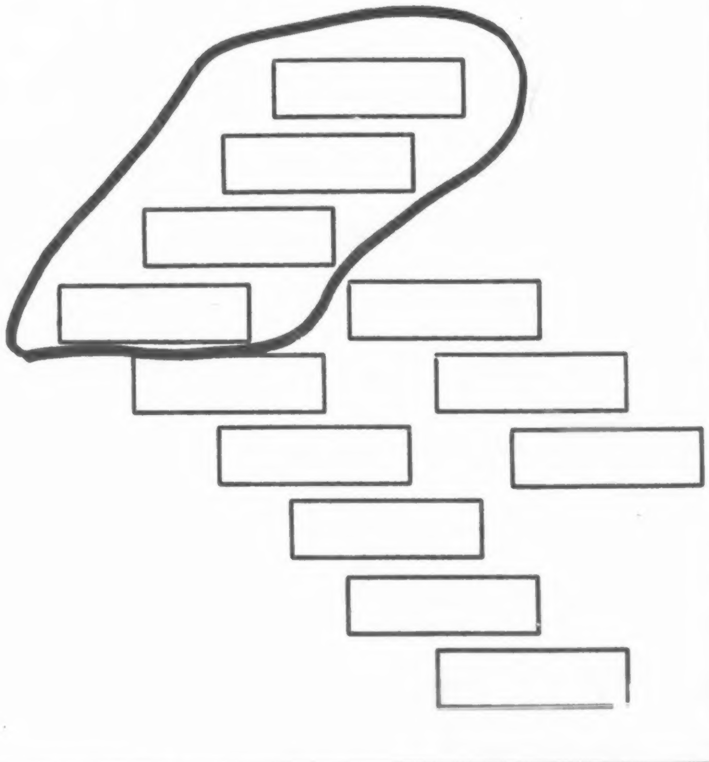
Page 9

Ring $\frac{1}{3}$ of the objects in each set.









Practice, 18.

TOTAL POINTS	NUMBER CORRECT
4	4

LEVEL	UNIT	SKILL	PAGE
C	08	4	9

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C	2	10 P	C.E.T.				7/7	100	1/2	100
2-5	C.J.C.	3			read stud.pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C.	3	1			4	3				
			9			4	4				
			12			9	8				
2-12	C.J.C.	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	3	75						
2	7	4	57						
3	5	2	40						
4	5	5	100						
DATES		2-1							

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C.	3		03	Teacher pg.	4	4				
2-12	C.J.C.	3	13	C.E.T.				6/6	100	1/2	50
2-15	C.J.C.	4	1			4	4				
			4			4	4				
			8			1	1				
			9			4	4				
2-16	C.J.C.	4	15	C.E.T							

10

This is the CET completed by Joe and corrected by the Aide.

You look at Joe's work on the CET:

Joe can: PART I - Divide a set into 2, 3, or 4 equal parts and name each part as 1/2, 1/3, 1/4. PART II - Note: There is no Part 2 because this is the last skill in the unit.

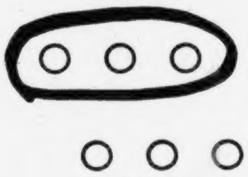
Joe cannot:

You describe how Joe worked with this prescription: Joe worked quickly and confidently on this CET. He was eager to demonstrate mastery of this skill.

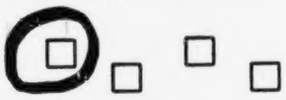
CET I

[illegible]	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

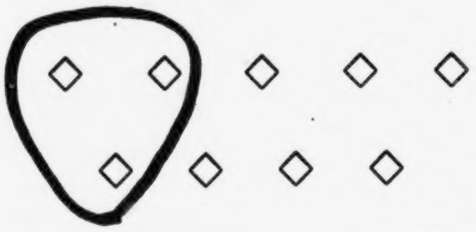
Ring $\frac{1}{2}$ of the set.



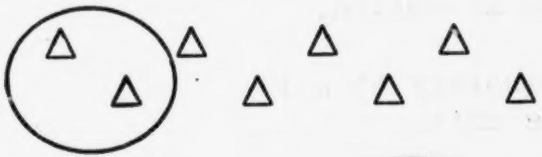
Ring $\frac{1}{4}$ of the set.



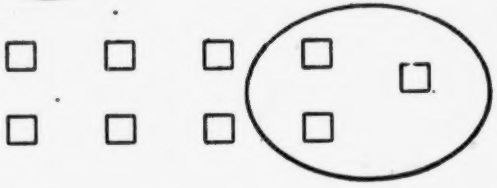
Ring $\frac{1}{3}$ of the set.



Ring the correct fraction.



[✓ $\frac{1}{4}$] $\frac{1}{3}$ $\frac{1}{2}$



$\frac{1}{2}$ $\frac{1}{4}$ [✓ $\frac{1}{3}$]

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Based on your analysis of Joe's work, you decide to:

_____ Extend prescription for the same skill.
_____ Assign a second CET for the same skill.
__X__ Assign a Post-test for unit C-FRAC.
_____ Assign the next unit Pre-test.

Based on your diagnosis of Joe's behavior, his performance on the Pre-test (all skills) and on these skill sheets, you decide to prescribe the following on 2/16:

Prescription	Reason
Review	To enable Joe to be comfortable in the testing situation.
Post-test	To determine mastery of all skills in this unit.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP ____________

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud. pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read stud. pg.						
			2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C.	3	1			4	3				
			9			4	4				
			12			9	8				
2-12	C.J.C.	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
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12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75						
②	7	4	57						
③	5	2	40						
4	5	5	100						
	DATES	2-1							

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C.	3		03	Teacher pg.	4	4				
2-12	C.J.C.	3	13	C.E.T.				6/6	100	1/2	50
2-15	C.J.C.	4	1		[illegible] TJ.	4	4				
			4			4	4				
			8			1	1				
			9			4	4				
2-16	C.J.C.	4	15	C.E.T.				5/5	100		
2-16	C.J.C.	Post-test									

This is the Post-test which has been completed by Joe and corrected by the Aide.

IPI MATHEMATICS POST-TEST

Name Joe Bowen
Class 3

Date
Number 0976

LEVEL C, FRACTIONS (08)

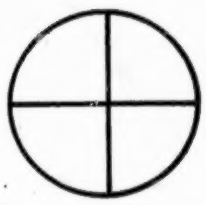
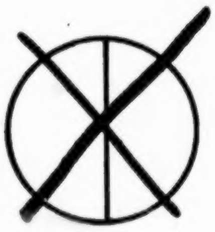
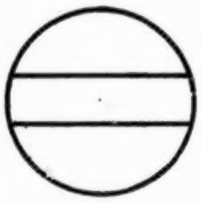
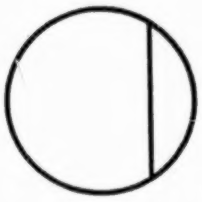
SKILL 1

TL PTS.	
4	100%
NO. PTS.	%
3	75
2	50
1	25

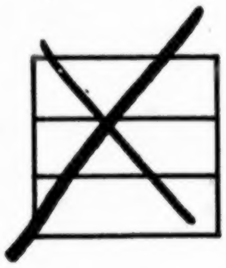
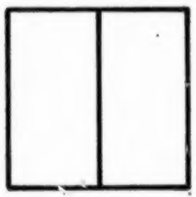
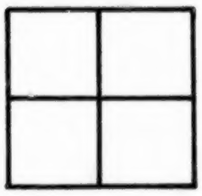
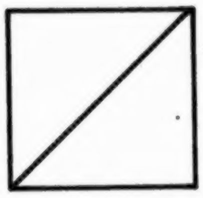
Fractions: Directs the student to divide sets, or to indicate sets and objects that are divided, into halves, thirds, and fourths; and to identify the fractions $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$.

Mark the figure that is divided into

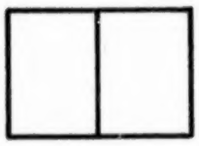
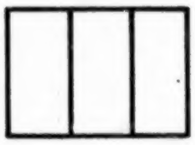
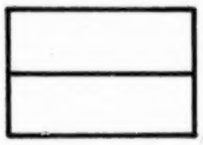
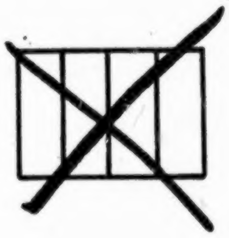
halves

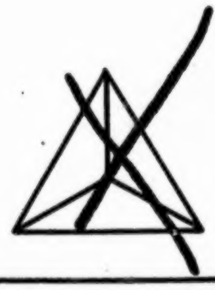
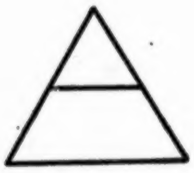
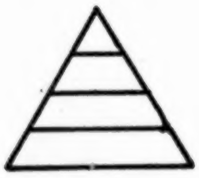
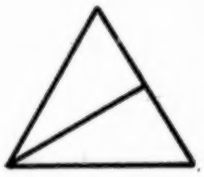
thirds

fourths

thirds

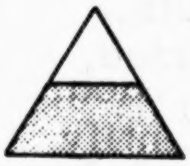
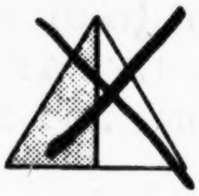
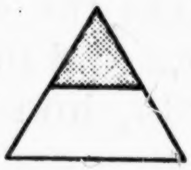





SKIL 2

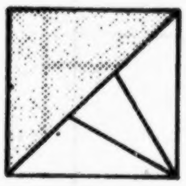
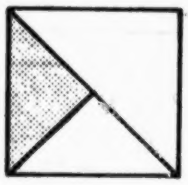
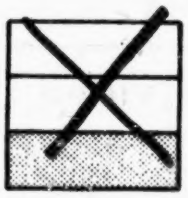
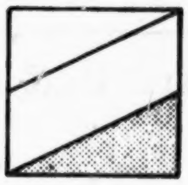
[illegible]	
7	100%
NO. PTS.	%
6	86
5	71
4	57
3	43
2	29
1	14

In each row, mark the shaded part that matches the fraction.

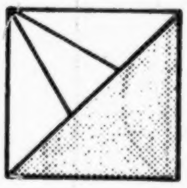
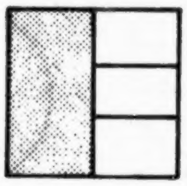
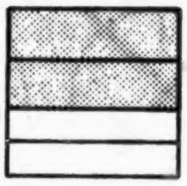
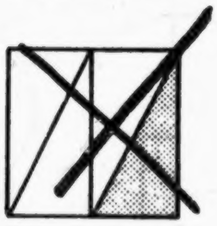
$\frac{1}{2}$

$\frac{1}{3}$

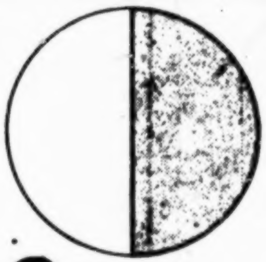
$\frac{1}{4}$

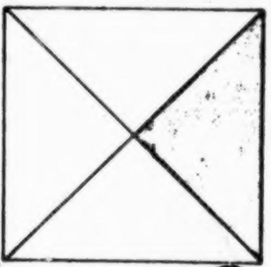
Fill in the blank.

One-fourth means one of 4 equal parts.

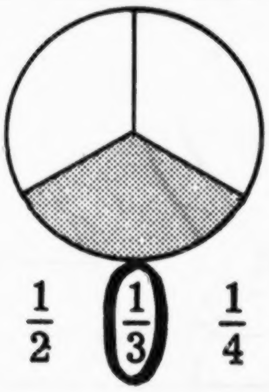
In each box, ring the fraction that matches the shaded part.



[✓ $\frac{1}{2}$] $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ [✓ $\frac{1}{4}$]

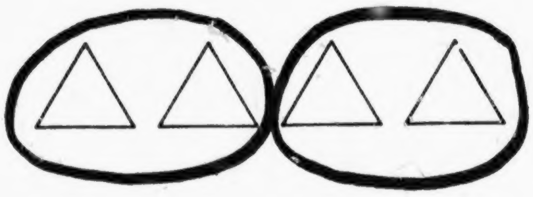


$\frac{1}{2}$ [✓ $\frac{1}{3}$] $\frac{1}{4}$

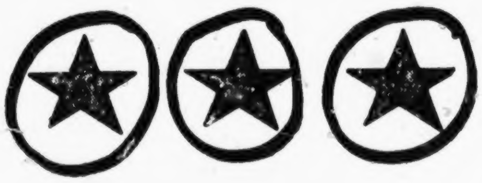
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
• 4	80
3	60
2	40
1	20

Ring the objects in order to divide the row into

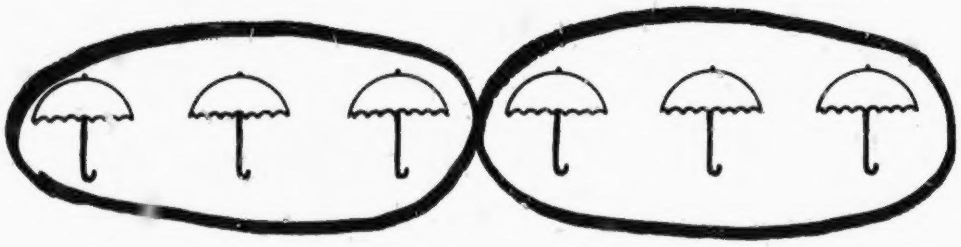
halves



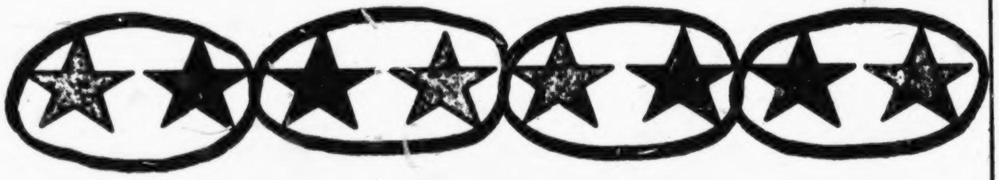
thirds



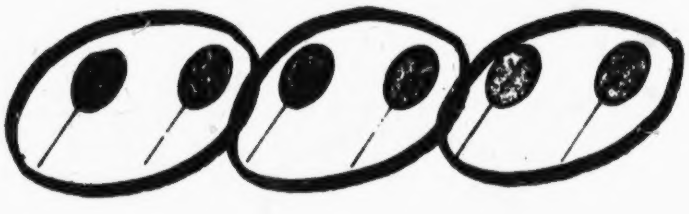
halves



fourths



thirds

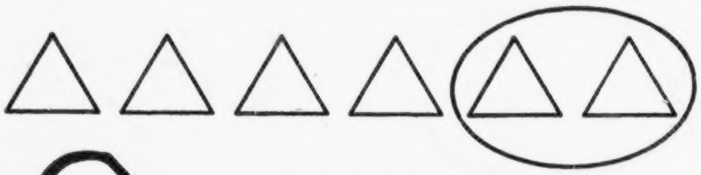


C FRACTIONS (08) POST-TEST

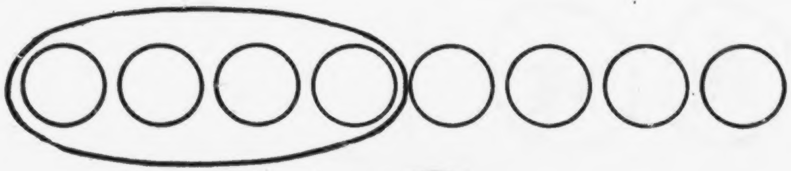
SKILL 4

T. PTS.	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

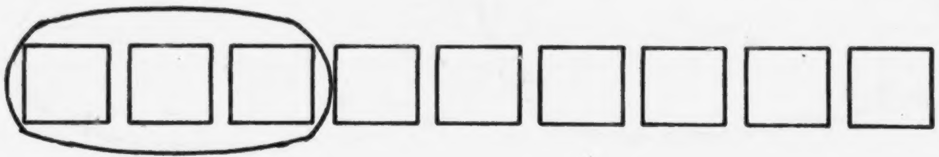
In each row, mark the fraction that tells what part of the row is circled.



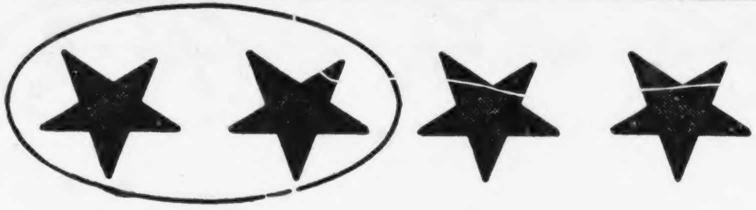
[✓ $\frac{1}{3}$] $\frac{1}{2}$ $\frac{1}{4}$



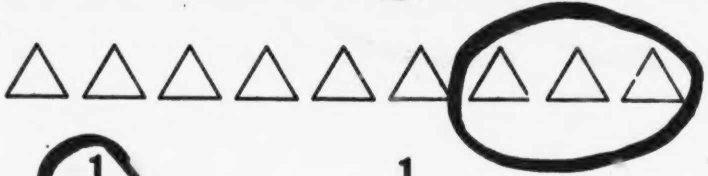
$\frac{1}{3}$ [✓ $\frac{1}{2}$] $\frac{1}{4}$



[✓ $\frac{1}{3}$] $\frac{1}{2}$ $\frac{1}{4}$



$\frac{1}{3}$ [✓ $\frac{1}{2}$] $\frac{1}{4}$



[✓ $\frac{1}{3}$] $\frac{1}{2}$ $\frac{1}{4}$

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
?											
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C.	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T.				7/7	100	1/2	50
2-5	C.J.C.	3			read Stud.pg.						
2-5	C.J.C.		2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C.	3	8	C.E.T				5/6	83	1/2	50
2-10	C.J.C.	3	1			4	3				
			9			4	4				
			12			9	9				
2-12	C.J.C.	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75	4	100				
②	7	4	57	7	100				
③	5	2	40	5	100				
4	5	5	100	5	100				
DATES		2-1							

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IPI MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen STUDENT NUMBER 0976 UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C.	3		03	Teacher pg.	4	4				
2-12	C.J.C.	3	13	C.E.T.				6/6	100	1/2	50
2-15	C.J.C.	4	1			4	4				
			4			4	4				
			8			1	1				
			9			4	4				
2-16	C.J.C.	4	15	C.E.T.				5/5	100		
2-16	C.J.C.	Post-test									

You examine the entire Post-test (starting on Page 136).

You note that Joe has mastered all skills in the unit.

You make a general statement about Joe's performance in each of these skills:

Joe can: Identify, divide and name fractional parts of sets using fractions 1/4, 1/3, 1/2 when pictures clues are presented.

Identify and divide sets into 1/4, 1/3, 1/2 with consistent accuracy.

You describe how Joe worked with this prescription: Joe didn't indicate any difficulty while completing this test. He worked independently on the entire test.

Based on your analysis of Joe's behavior, his performance in the unit materials and his growth as evidenced in his work in this unit, you decide to accept Joe's Post-test result as unit mastery.

The Prescription Sheet illustrates this in the lower right hand corner under "Post-test Score".

To officially close Joe out of the unit the teacher writes "Mastery, her initials, and the date" at the top of the first Prescription Sheet. This tells the aide that Joe is finished working in the unit and she may pull and file the Prescription Sheets and tests.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

Mastery C.J.C. 2-16

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
SCHOOL STAMP

GRADE 3 ROOM 107 UNIT C-Fractions

UNIT DATES	
UNIT BEGAN	2-1
UNIT ENDED	2-16
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-1	J.J.	Pre-test									
2-1	J.J.	1			read stud.pg.						
2-2	C.J.C	1	4			4	4				
			5			6	6				
			6			10	10				
2-2	C.J.C.	1		12	Fraction pies						
				02	Mark S.						
2-4	C.J.C.	1	10	C.E.T.				8/8	100	3/3	100
2-5	C.J.C.	2	10P	C.E.T				7/7	100	1/2	50
2-5	C.J.C	3			read stud pg.						
2-5	C.J.C		2			4	4				
			4			3	2				
			5	02		6	5				
			7	02		4	4				
2-10	C.J.C	3	8	C.E.T.				5/6	83	1/2	50
2-10	C.J.C	3	1			4	3				
			9			4	4				
			12			9	9				
2-12	C.J.C	3		12	Blocks						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	3	75	4	100				
②	7	4	57	7	100				
③	5	2	40	5	100				
4	5	5	100	5	100				
DATES		2-1		2-16					

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Joe Bowen
STUDENT NUMBER 0976
UNIT C-Fractions

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
2-12	C.J.C	3		03	Teacher	pg.4	4				
2-12	C.J.C	3	13	C.E.T.				6/6	100	1/2	50
2-15	C.J.C	4	1		[redacted]	4	4				
			4			4	4				
			8			1	1				
			9			4	4				
2-16	C.J.C.	4	15	C.E.T.				5/5	100		
2-16	C.J.C	Post-test									

This is Joe's Student Profile Sheet which remains in his folder at all times. After closing out the Prescription Sheet you or Joe are to place a "M" and the date in the appropriate block to indicate mastery.

Now you are ready to Pre-test Joe in the next unit as indicated by his Student Profile.

This next unit would be C-MONEY.

ipi STUDENT PROFILE

MATHEMATICS

Name Joe Bowen Grade 3 Room 107

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	X	M 10-1	M 11-21					
PLACE VALUE (02)	▨	M 10-15	M 12-4					
ADDITION (03)	▨	▨	M 1-8					
SUBTRACTION (04)	▨	▨	M 1-31					
ADDITION/ SUBTRACTION (34)	X	X	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨					
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	X					
FRACTIONS (08)	X	M 10-30	M 2-16					
MONEY (09)	▨	X					▨	▨
TIME (10)	▨	X						
SYSTEMS OF MEASUREMENT (11)	▨	X						▨
GEOMETRY (12)	▨	X						
SPECIAL TOPICS (13)	▨	▨						

You have just completed one case study.

In Volume 5 you will take an active part in the role of the teacher.

ED030584

TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 5

Developing a Prescription

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

SP002419

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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DEVELOPING A PRESCRIPTION

CASE STUDY - TYPE 2

SUSAN MARKHAM
D-MULT.

This second case study deals with Susan Markham. Susan is a fourth grade student who has been working in IPI Math for one year.

As you work through the section you will be prescribing work in order to help Susan overcome her deficiencies in math. You will find that as you write a prescription you are referred to a "Written Prescription" in order to provide you with another person's way of analyzing and prescribing for Susan.

On the following page you will be presented with some helpful background information which Susan's teacher takes into consideration as she prescribes for Susan.

Susan's teacher takes several things into consideration when writing a prescription for her.

Listed here are some criteria on which Susan's Prescriptions were based:

A. Test Performance

   1. Placement Test Results
   2. Pre-test Results

B. Post Performance in IPI Math

   1. In related skills
   2. In same unit at lower level

C. Learning Characteristics

   1. Susan uses manipulative aids well.
   2. Susan works well in peer-tutor.
   3. Susan works well in a small group.
   4. Susan requests help often.
   5. Susan views tests in personal way.

It is important that the individual's prescriptions reflect all learning characteristics in order to best meet his needs. It may be seen in the type and amount of materials prescribed and the instructional technique assigned.

This is Susan's Placement Profile. She was administered the Level C Battery of tests initially with additional Level B and Level D tests given when necessary.

Examine the test scores and fill in the "Placed at Level Column". Your answers can be checked on Page 7.

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Susan Markham

STUDENT NUMBER 1234

SCHOOL STAMP________ GRADE 4 ROOM 102

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	10						
		SCORE	4	2						
		%	40	20						
PLACE VALUE (02)		MAX. PTS.	10	10						
		SCORE	5	1						
		%	50	10						
ADDITION (03)		MAX. PTS.	▨	10						
		SCORE	▨	6						
		%	▨	60						
SUBTRACTION (04)		MAX. PTS.	▨	10						
		SCORE	▨	7						
		%	▨	70						
ADDITION/ SUBTRACTION (34)		MAX. PTS.	10	▨	▨	▨	▨	▨		
		SCORE	9	▨	▨	▨	▨	▨		
		%	90	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨		10					
		SCORE	▨		6					
		%	▨		60					
DIVISION (06)		MAX. PTS.	▨		10					
		SCORE	▨		5					
		%	▨		50					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	10	10					
		SCORE	▨	9	6					
		%	▨	90	60					
FRACTIONS (08)		MAX. PTS.		10	10					
		SCORE		8	4					
		%		80	40					
MONEY (09)		MAX. PTS.		10	10			▨	▨	
		SCORE		9	5			▨	▨	
		%		90	50			▨	▨	
TIME (10)		MAX. PTS.		10	10					
		SCORE		10	4					
		%		100	40					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		10	10				▨	
		SCORE		8	6				▨	
		%		80	60				▨	
GEOMETRY (12)		MAX. PTS.		10	10					
		SCORE		10	6					
		%		100	60					

ipi MATHEMATICS PLACEMENT PROFILE

MATHEMATICS

STUDENT NAME Susan Markham STUDENT NUMBER 1234

SCHOOL STAMP_____ GRADE 4 ROOM 102

MATHEMATICS AREA	DATE OF TEST		PLACEMENT LEVELS B–H							PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	10						B
		SCORE	4	2						
		%	40	20						
PLACE VALUE (02)		MAX. PTS.	10	10						B
		SCORE	5	1						
		%	50	10						
ADDITION (03)		MAX. PTS.	▨	10						C
		SCORE	▨	6						
		%	▨	60						
SUBTRACTION (04)		MAX. PTS.	▨	10						C
		SCORE	▨	7						
		%	▨	70						
ADDITION/ SUBTRACTION (34)		MAX. PTS.	10	▨	▨	▨	▨	▨		H
		SCORE	9	▨	▨	▨	▨	▨		
		%	90	▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨		10					D
		SCORE	▨		6					
		%	▨		60					
DIVISION (06)		MAX. PTS.	▨		10					D
		SCORE	▨		5					
		%	▨		50					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		H
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨	10	10					D
		SCORE	▨	9	6					
		%	▨	90	60					
FRACTIONS (08)		MAX. PTS.		10	10					D
		SCORE		8	4					
		%		80	40					
MONEY (09)		MAX. PTS.		10	10			▨	▨	D
		SCORE		9	5			▨	▨	
		%		90	50			▨	▨	
TIME (10)		MAX. PTS.		10	10					D
		SCORE		10	4					
		%		100	40					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		10	10				▨	D
		SCORE		8	6				▨	
		%		80	60				▨	
GEOMETRY (12)		MAX. PTS.		10	10					D
		SCORE		10	6					
		%		100	60					

Transfer the information from the "Placed At Level" column on the Placement Profile to the Student Profile Sheet by placing an x in each unit block in which the Placement Test indicated mastery.

Check your work on Page 11.

ipi MATHEMATICS

STUDENT PROFILE

Name ______________________ Grade ______________ Room ________

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)								
PLACE VALUE (02)	▨							
ADDITION (03)	▨	▨						
SUBTRACTION (04)	▨	▨						
ADDITION/ SUBTRACTION (34)			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨					
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨						
FRACTIONS (08)								
MONEY (09)	▨						▨	▨
TIME (10)	▨							
SYSTEMS OF MEASUREMENT (11)	▨							▨
GEOMETRY (12)	▨							
SPECIAL TOPICS (13)	▨	▨						

ipi STUDENT PROFILE

MATHEMATICS

Name Susan Markham Grade 4 Room 201

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒							
PLACE VALUE (02)	▨							
ADDITION (03)	▨	▨						
SUBTRACTION (04)	▨	▨						
ADDITION/ SUBTRACTION (34)	☒	☒	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨					
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	☒					
FRACTIONS (08)	☒	☒	☒					
MONEY (09)	▨	☒	☒				▨	▨
TIME (10)	▨	☒	☒					
SYSTEMS OF MEASUREMENT (11)	▨	☒	☒					▨
GEOMETRY (12)	▨	☒	☒					
SPECIAL TOPICS (13)	▨	▨						

Susan has previously worked through units B-NUM, B-PV, C-NUM, C-PV, C-ADD, C-SUB, D-NUM, D-PV, D-ADD, D-SUB. Examine the Profile and circle the next unit to be assigned.

ipi STUDENT PROFILE

MATHEMATICS

Name Susan Markham Grade 4 Room 102

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒	M 9-25	M 11-17	M 1-27				
PLACE VALUE (02)	▨	M 10-30	M 12-1	M 2-7				
ADDITION (03)	▨	▨	M 12-20	M 2-15				
SUBTRACTION (04)	▨	▨	M 1-18	M 3-2				
ADDITION/ SUBTRACTION (34)	☒	☒	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨					
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	☒					
FRACTIONS (08)	☒	☒	☒					
MONEY (09)	▨	☒	☒				▨	▨
TIME (10)	▨	☒	☒					
SYSTEMS OF MEASUREMENT (11)	▨	☒	☒					▨
GEOMETRY (12)	▨	☒	☒					
SPECIAL TOPICS (13)	▨	▨						

ipi MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Susan Markham STUDENT NUMBER 1234

SCHOOL STAMP GRADE 4 ROOM 102

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.	10	10						B
		SCORE	4	2						
		%	40	20						
PLACE VALUE (02)		MAX. PTS.	10	10						B
		SCORE	5	1						
		%	50	10						
ADDITION (03)		MAX. PTS.		10						C
		SCORE		6						
		%		60						
SUBTRACTION (04)		MAX. PTS.		10						C
		SCORE		7						
		%		70						
ADDITION/ SUBTRACTION (34)		MAX. PTS.	10							H
		SCORE	9							
		%	90							
MULTIPLICATION (05)		MAX. PTS.			10					D
		SCORE			6					
		%			60					
DIVISION (06)		MAX. PTS.			10					D
		SCORE			5					
		%			50					
MULTIPLICATION/ DIVISION (56)		MAX. PTS.								H
		SCORE								
		%								
COMBINATION OF PROCESSES (07)		MAX. PTS.		10	10					D
		SCORE		9	6					
		%		90	60					
FRACTIONS (08)		MAX. PTS.		10	10					D
		SCORE		8	4					
		%		80	40					
MONEY (09)		MAX. PTS.		10	10					D
		SCORE		9	5					
		%		90	50					
TIME (10)		MAX. PTS.		10	10					D
		SCORE		10	4					
		%		100	40					
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.		10	10					D
		SCORE		8	6					
		%		80	60					
GEOMETRY (12)		MAX. PTS.		10	10					D
		SCORE		10	6					
		%		100	60					

Susan is to begin work in D-Mult. The teacher assigns the D-Mult Pre-Test which Susan completes and gives to the Aide for scoring.

This is a copy of Susan's Pre-test that has been scored by the Aide. Examine her test and circle the skills on her Prescription Sheet in which she must work.
Check your selection with those circled on Page 27.

ipl MATHEMATICS PRE-TEST

Name Susan Markham
Class
Date
Number 1234

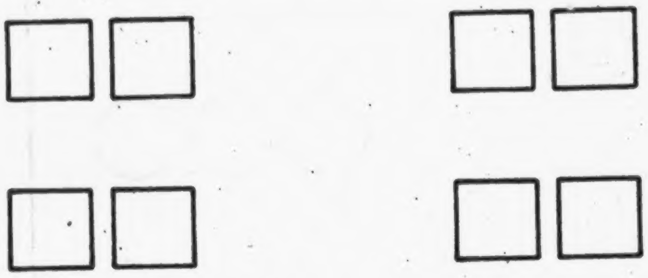
LEVEL D, MULTIPLICATION (05)

SKILL 1

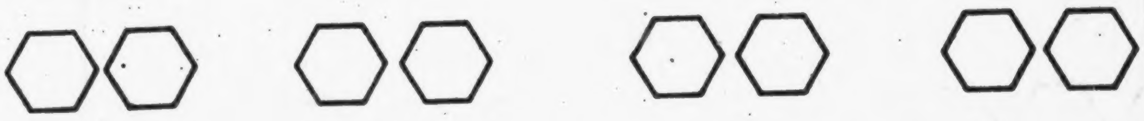
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
[✓ 2]	[✓ 50]
1	25

Multiplication: Introduces multiplication facts through structured sets; applies facts to solve word problems.

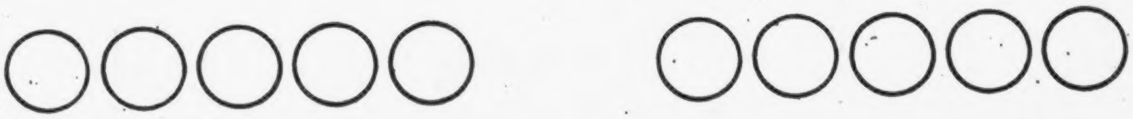
Complete each equation.



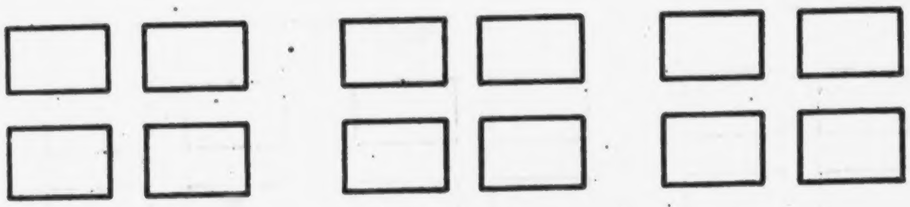
2 × 4 = 4 X



4 × 2 = 8



2 × 5 = 18 X



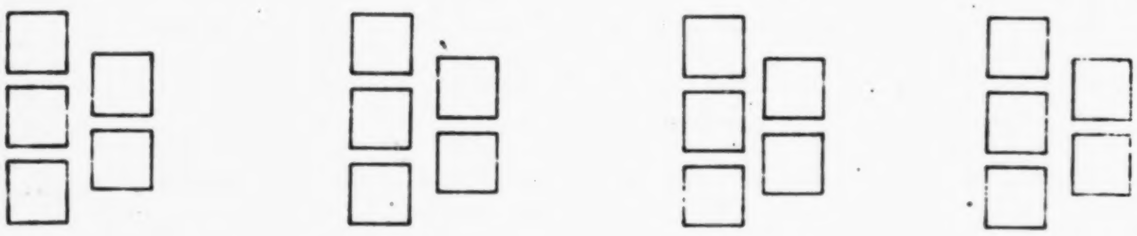
3 × 4 = 12

D MULTIPLICATION (05) PRE-TEST

SKILL 2

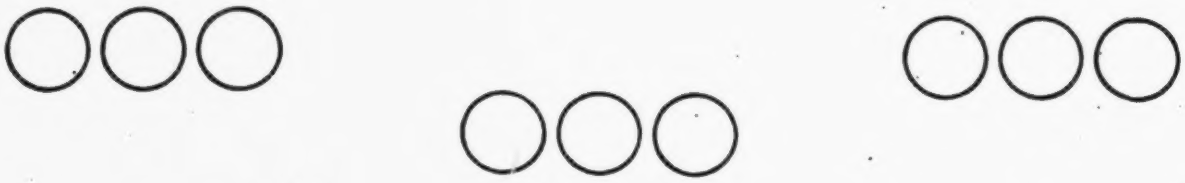
TL PTS	
5	100%
[illegible]	
PTS.	%
4	80
3	60
2	40
1	20

Complete each equation.



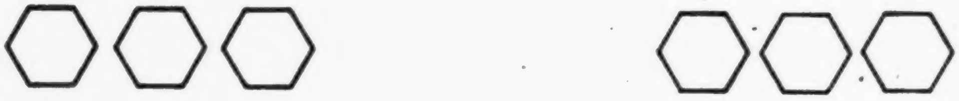
5 + 5 + 5 + 5 = 20

4 × 5 = 20



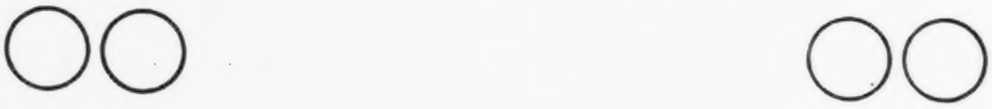
3 + 3 + 3 = 9

3 × 3 = 9



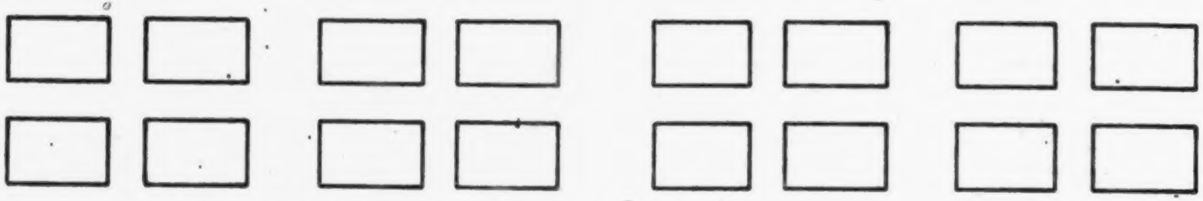
3 + 3 = 6

2 × 3 6



2 + 2 = 4

2 × 2 = 4



4 + 4 + 4 + 4 = 16

4 × 4 = 16

D MULTIPLICATION (05) PRE-TEST

SKILL 3

[illegible]	
[✓ 8]	[✓ 100%]
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

Multiply.

$$\begin{array}{r} 9 \\ \times\ 1 \\ \hline 9 \end{array} \qquad \begin{array}{r} 0 \\ \times\ 6 \\ \hline 0 \end{array} \qquad \begin{array}{r} 1 \\ \times\ 3 \\ \hline 3 \end{array} \qquad \begin{array}{r} 7 \\ \times\ 0 \\ \hline 0 \end{array}$$

$6 \times 1 =$ 6

$0 \times 8 =$ 0

$0 \times 0 =$ 0

$5 \times 0 =$ 0

D MULTIPLICATION (05) PRE-TEST

SKILL 4

TL. PTS.	
20	100%
NO. OF PTS.	%
19	95
18	90
17	85
16	80
15	75
14	70
13	65
12	60
11	55
10	50
9	45
8	40
7	35
6	30
5	25
4	20
[✓ 3]	[✓ 15]
2	10
1	5

Multiply.

8	4	9	6	5
× 2 X	× 3 X	× 5 X	× 3 X	× 5 X
7	10	5	8	4
× 4 X	× 2 X	× 4 X	× 5 X	× 2 X
6	1	7	2	8
× 5 X	× 4	× 2 X	× 3 X	× 4 X
	4			

3 × 9 = ____ X

5 × 1 = 5

3 × 0 = 0

4 × 10 = ____ X

2 × 9 = ____ X

D MULTIPLICATION (05) PRE-TEST

SKILL 6

TL PTS	
5	100%
NO OF PTS	%
4	80
3	60
2	40
1	20

Multiply.

4 × 2 8

2 × 4 8

3 × 7 21

7 × 3 21

1 × 6 6

6 × 1 6

2 × 5 10

5 × 2 10

9 × 3 27

3 × 9 27

D MULTIPLICATION (05) PRE-TEST SKILL 8

[illegible]	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Solve each problem. Label the answer.

Tom had 3 piles of cards. There were 4 cards in each pile. How many cards were there in all?

12

Bob went bowling. In each of 3 tries he knocked down 6 pins. How many pins did he knock down in all?

18

Three boys went fishing. Each boy caught 5 fish. How many fish did they catch in all?

15

How many marbles would 5 boys have in all if each boy had 4 marbles?

20

Mr. Gibbons had 3 bunches of bananas. There were 7 bananas in each bunch. How many bananas were there in all?

21

23/24

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham

STUDENT NUMBER

SCHOOL STAMP

GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	3	75						
2	5	5	100						
3	8	8	100						
4	20	3	15						
5	5	0	0						
6	5	5	100						
7	5	0	0						
8	5	5	100						
DATES									

P1 – 1968

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham

STUDENT NUMBER

SCHOOL STAMP

GRADE 4 ROOM UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES									

Here is a copy of the STS Booklet for Skill 1. Examine the booklet to determine which pages Susan will be assigned to overcome her deficiency.

Select the pages you wish Susan to work and assign them on the Prescription Sheet on Page 25.

After you have written your prescription for Skill one, compare your assignments with the prescription on Page 57.

ipi MATHEMATICS

Name ______________________ Date ______________

Class ______________________ Number ______________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff
LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

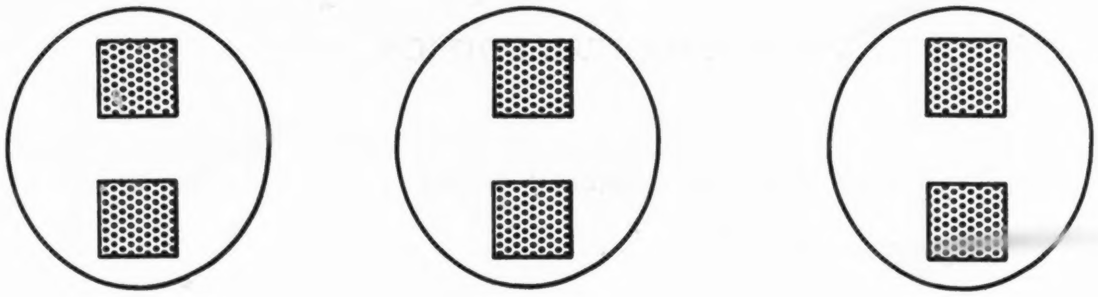
the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, MULTIPLICATION (05), SKILL 1

TO THE STUDENT

This picture shows ____ sets of ____ things.



How many things are there altogether?

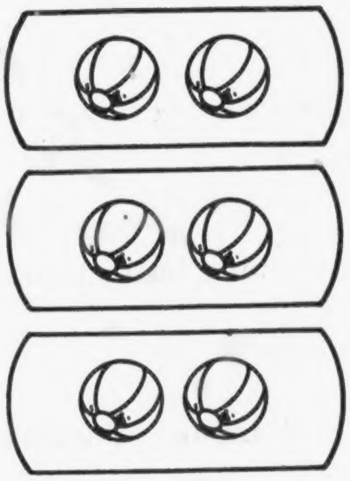
____ sets of ____ things = ____ things

In this booklet you will do multiplication problems with the aid of pictured sets.

Answers

3	2	3	2	6

Write the correct answers.



How many sets are circled? 3

How many balls are in each set? 2

How many balls are there altogether? 6

When you have 3 sets of 2, write it 3 × 2.

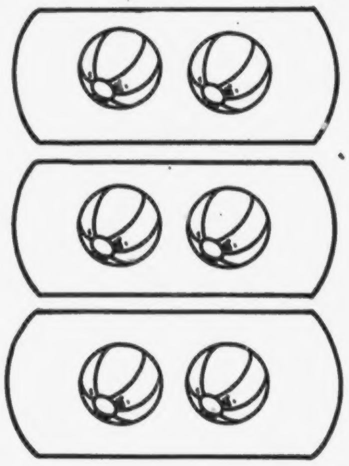
3 × 2 is read 3 "times" 2.

For extra practice, do Page 17.

TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
D	05	1	1

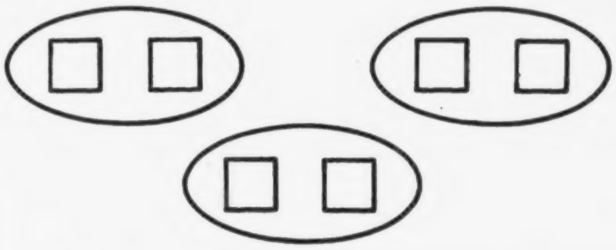
Write the correct answers.



How many sets are circled? 3

How many balls in each set? ____

3 × 2 means 3 sets of ____



How many sets are circled? ____

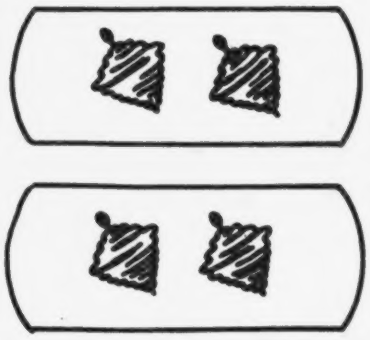
How many squares in each set? ____

3 sets of 2 can be written as ____

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	05	1	2

Write the correct answers.

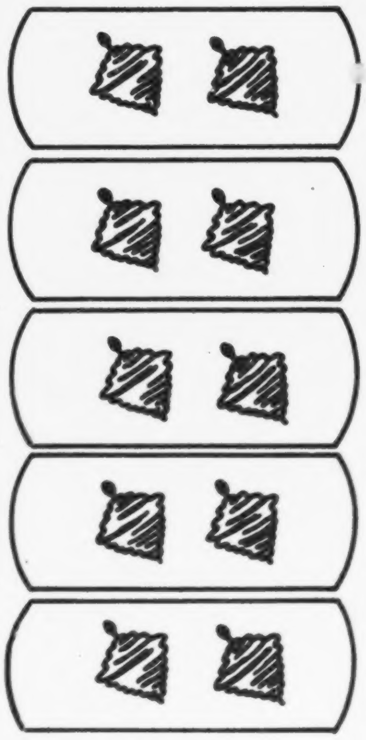


How many sets are circled? 2

How many tops are in each set? ____

How many tops altogether? ____

2 sets of 2 can be written as ______



How many sets are circled? ____

How many tops are in each set? ____

How many tops altogether? ____

5 sets of 2 can be written as ______

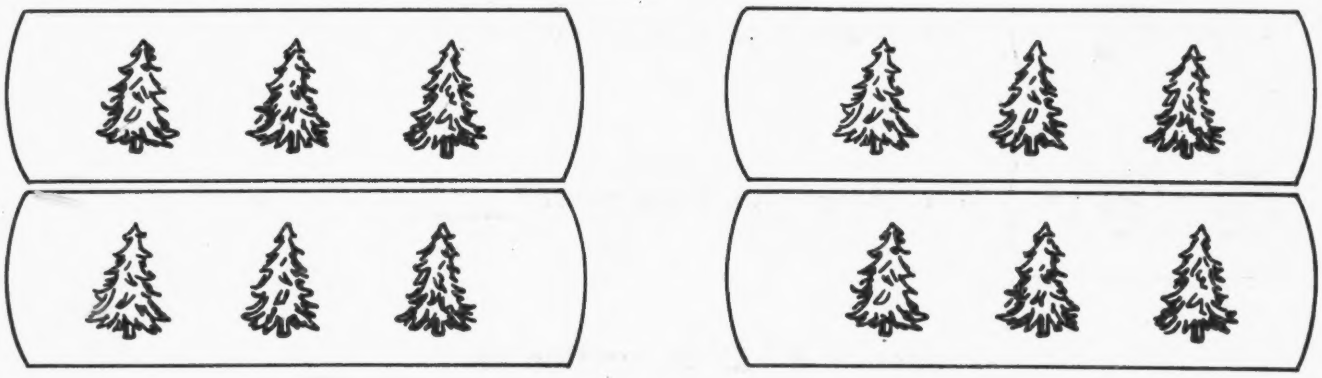
For extra practice, do Page 18.

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	05	1	3

Look at the sets.

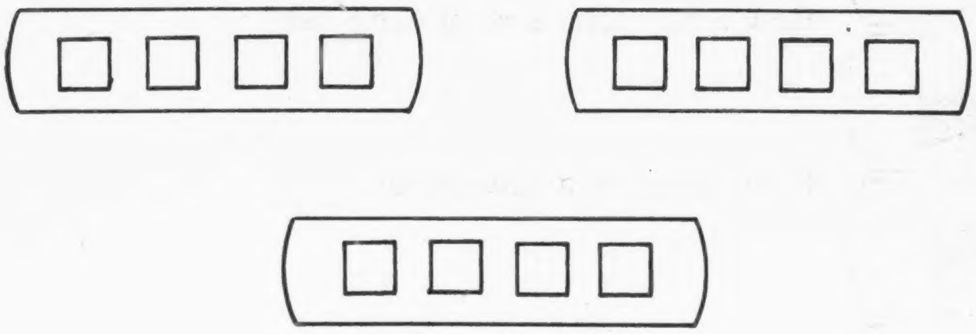
Write the correct answer in each blank.



4 sets of ____

or

4 × ____ or 4 "times" 3



3 sets of ____

or

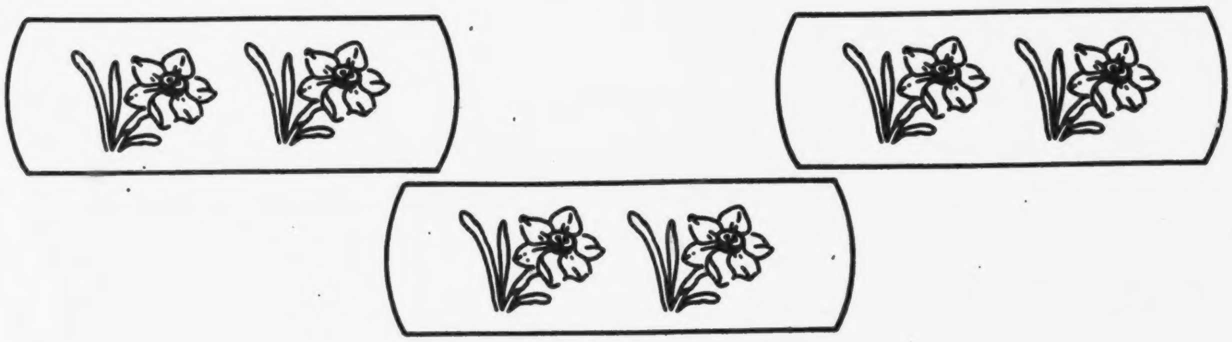
3× ____

For extra practice, do Page 19.

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	05	1	4

Write the correct answers.



This picture shows _3_ sets of ____.

How many things altogether? _6_

3 sets of 2 = _6_. Write this as 3 × 2 = ____, and say 3 "times" 2 equals 6.

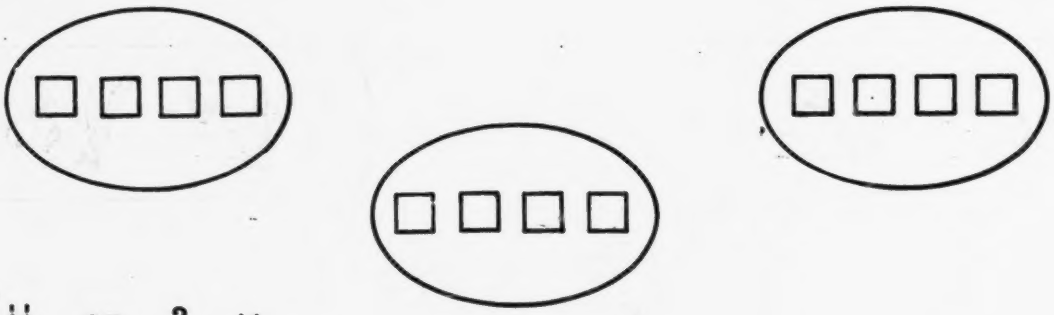
This is called multiplication.

3 × 2 = 6 is a multiplication equation.

TOTAL POINTS	NUMBER CORRECT
5	

LEVEL	UNIT	SKILL	PAGE
D	05	1	5

Write the correct answers.

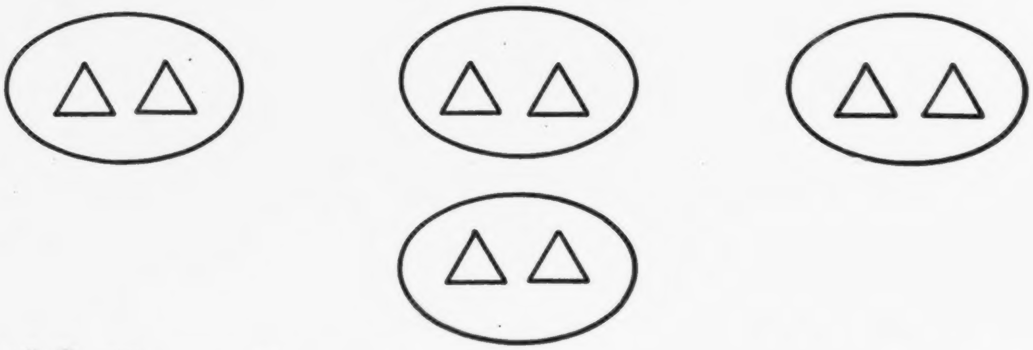


3 sets of 4 or 3 × ____

How many things altogether? 12

3 sets of 4 = 12

Write this as 3 × 4 = 12, and say 3 "times" 4 is "equal" to 12.



4 sets of 2, or ____ × ____

How many things altogether? ____

4 sets of 2 = ____

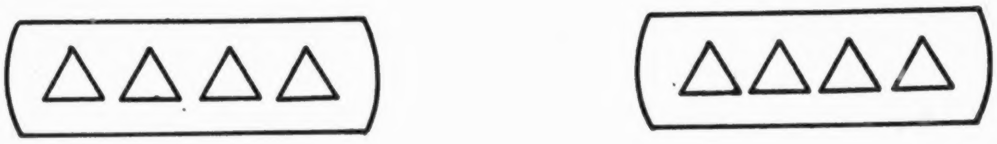
Write this as 4 × 2 = ____

For extra practice, do Page 20.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	05	1	6

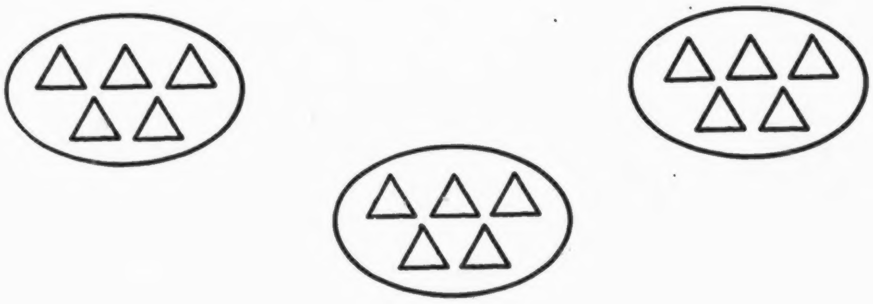
Write the multiplication equation for each picture.



This picture shows 2 sets of ____.

How many triangles altogether?____

2 × ____ = 8



This picture shows 3 sets of ____.

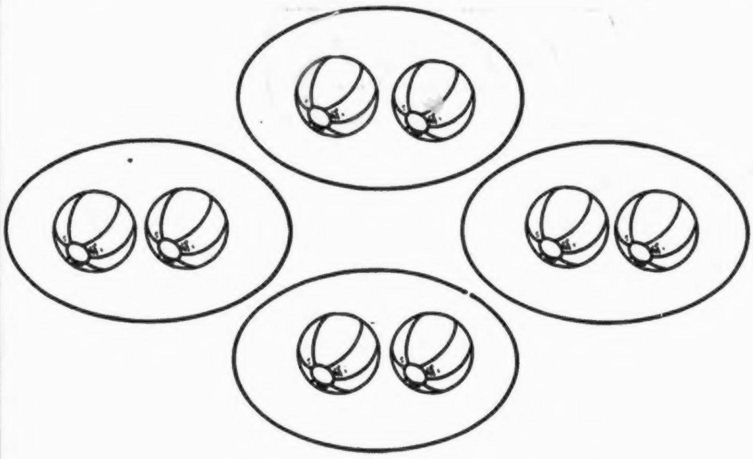
How many triangles altogether?____

3 × ____ = ____

TOTAL POINTS	NUMBER CORRECT
9	

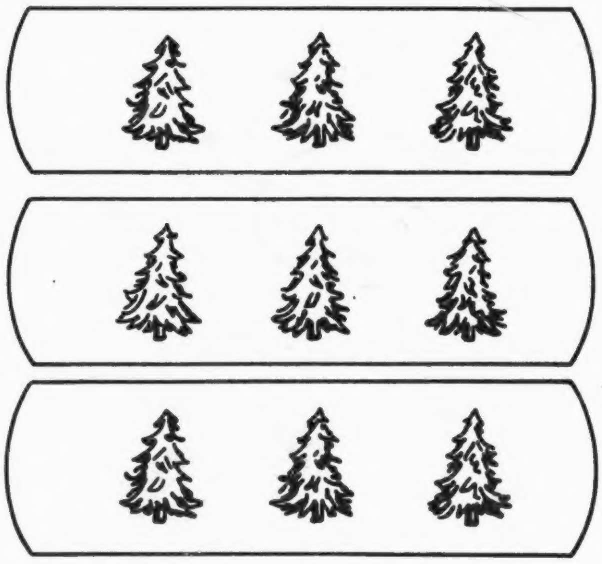
LEVEL	UNIT	SKILL	PAGE
D	05	1	7

Write a multiplication equation for each picture.



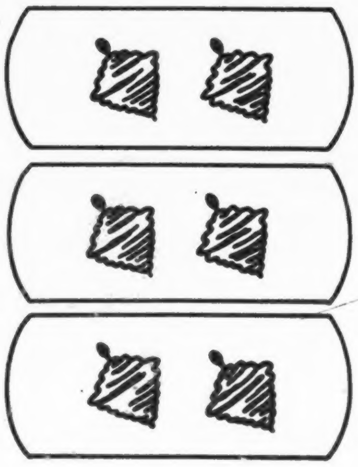
4 sets of 2 = 4 × 2

4 × 2 = 8



3 sets of 3 = 3 × ____

3 × ____ = 9



3 sets of 2 = 3 × ____

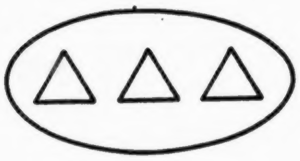
3 × ____ = 6

For extra practice, do Page 21.

TOTAL POINTS	NUMBER CORRECT
6	

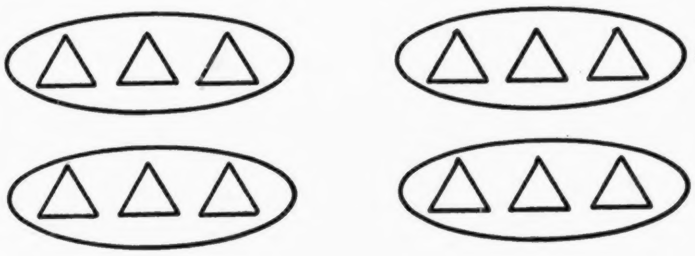
LEVEL	UNIT	SKILL	PAGE
D	05	1	8

Write a multiplication equation for each picture.



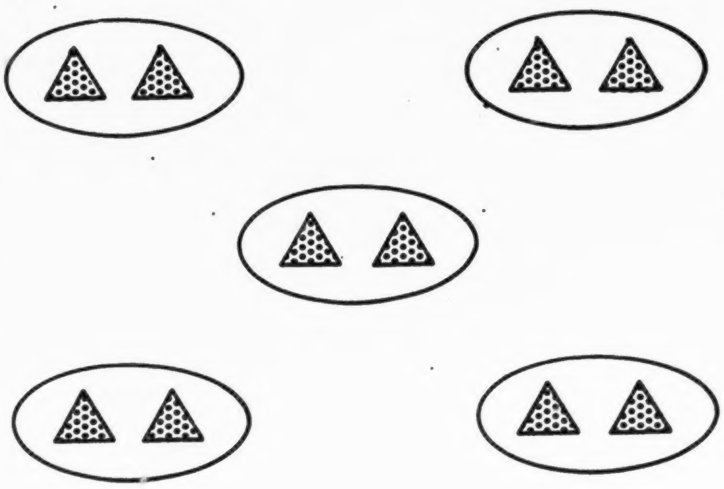
1 set of ____ = 1 × ____

1 × ____ = 3



4 sets of ____ = 4 × ____

4 × ____ = ____



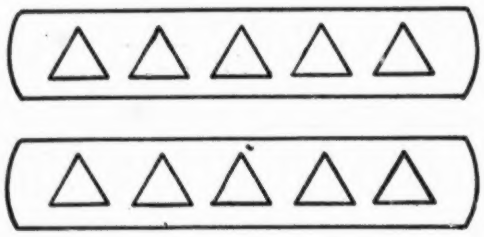
5 sets of ____ = 5 × ____

5 × ____ = ____

TOTAL POINTS	NUMBER CORRECT
12	

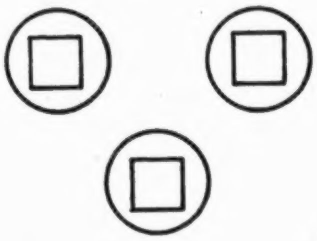
LEVEL	UNIT	SKILL	PAGE
D	05	1	9

Write the multiplication equations for each picture.



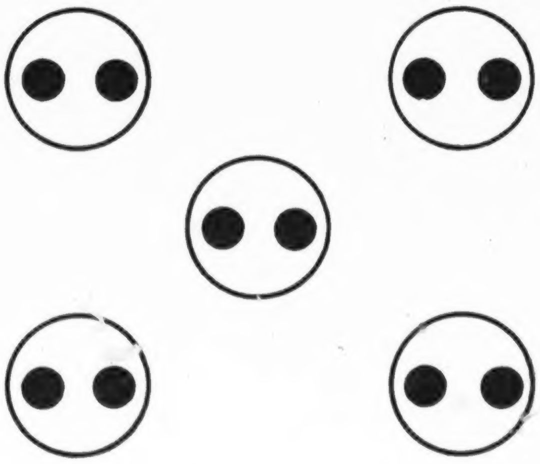
2 sets of 5 = 2 × 5

2 × ____ = 10



____ sets of ____ = 3 × ____

3 × ____ = ____



____ sets of ____ = 5 × ____

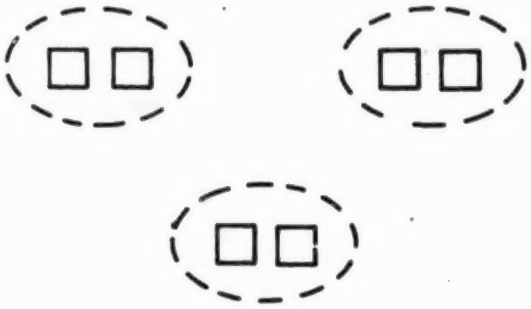
5 × ____ = ____

For extra practice, do Page 22.

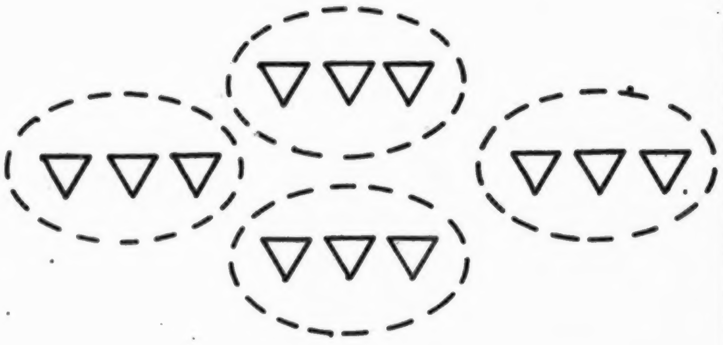
TOTAL POINTS	NUMBER CORRECT
15	

LEVEL	UNIT	SKILL	PAGE
D	05	1	10

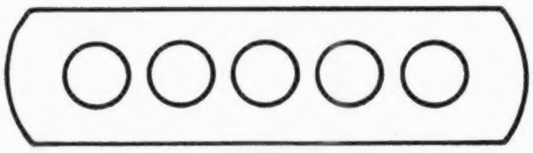
Count how many objects there are altogether and write the correct answers.



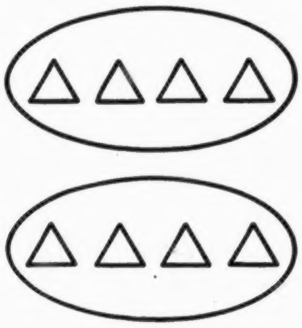
3 × 2 = 6



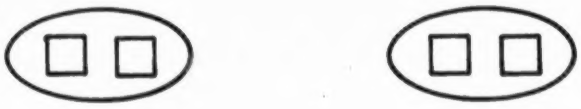
4 × 3 = ____



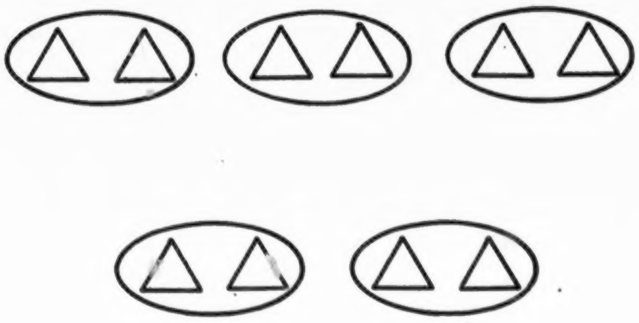
1 × 5 = ____



2 × 4 = ____



2 × 2 = ____

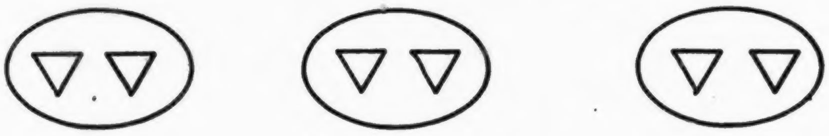


5 × 2 = ____

TOTAL POINTS	NUMBER CORRECT
6	

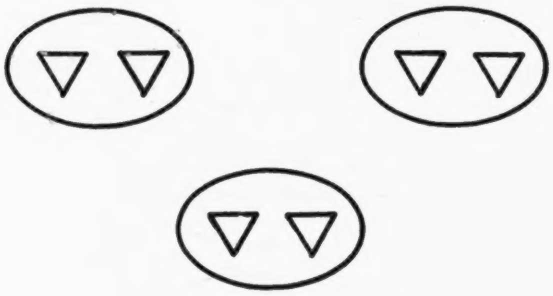
LEVEL	UNIT	SKILL	PAGE
D	05	1	11

Write the multiplication equation for each picture.

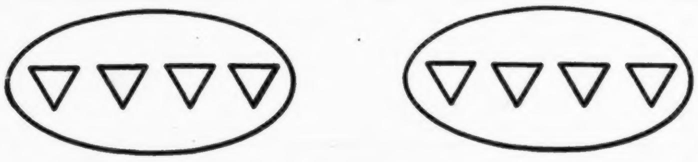


3 sets of 2 = 6

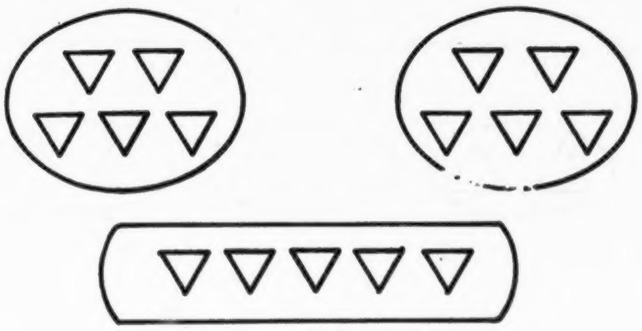
3 × ___ = ___



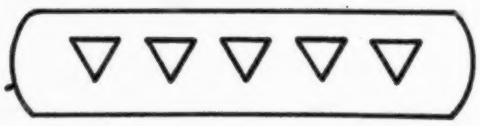
3 × ___ = ___



___ × ___ = 8



___ × ___ = ___

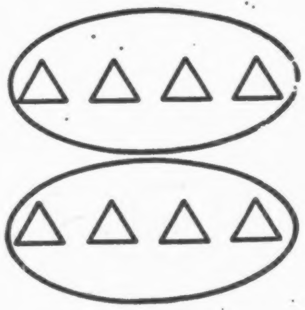


___ × ___ = ___

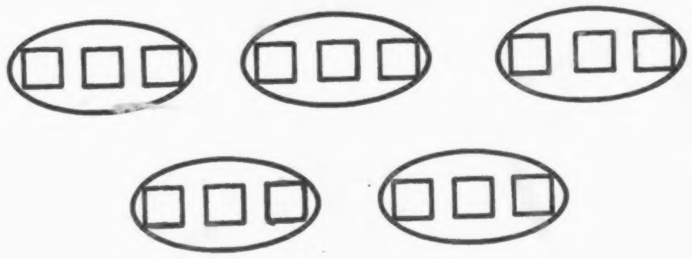
TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
D	05	1	12

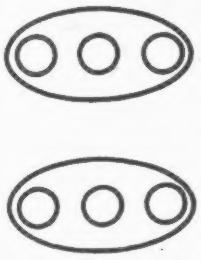
Write the multiplication equation for each picture.



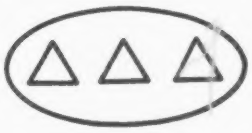
2 × ___ = ___



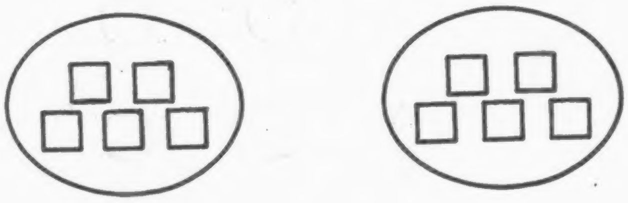
___ × ___ = ___



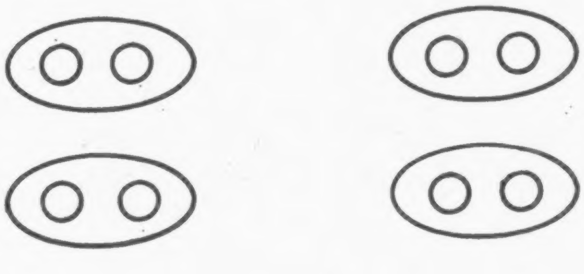
___ × ___ = ___



___ × ___ = ___



___ × ___ = ___



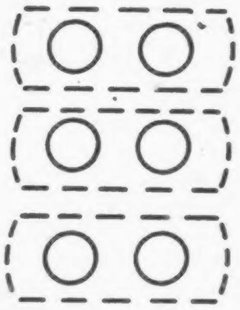
___ × ___ = ___

For extra practice, do Page 23.

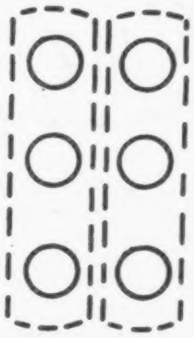
TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
D	05	1	13

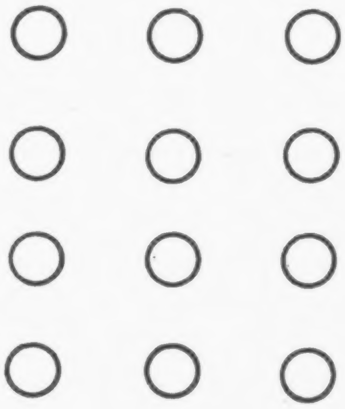
Circle the objects to make the pictures match the equations. Write the products in the blanks.



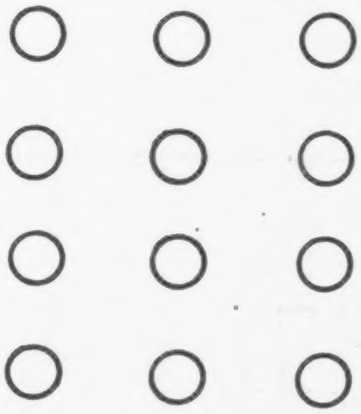
3 × 2 = ____



2 × 3 = ____



3 × 4 = ____



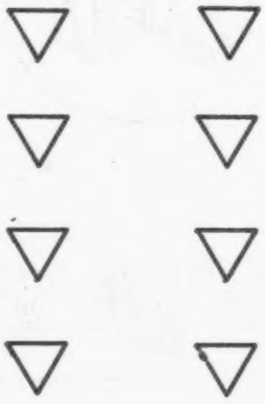
4 × 3 = ____

For extra practice, do Page 24.

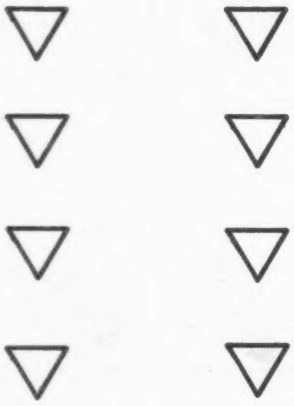
TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	05	1	14

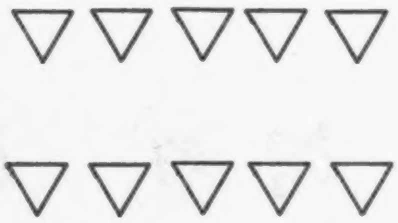
Circle the object to make the pictures match the equations. Write the products in the blanks.



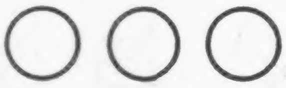
2 × 4 = ____



4 × 2 = ____



2 × 5 = ____



1 × 3 = ____

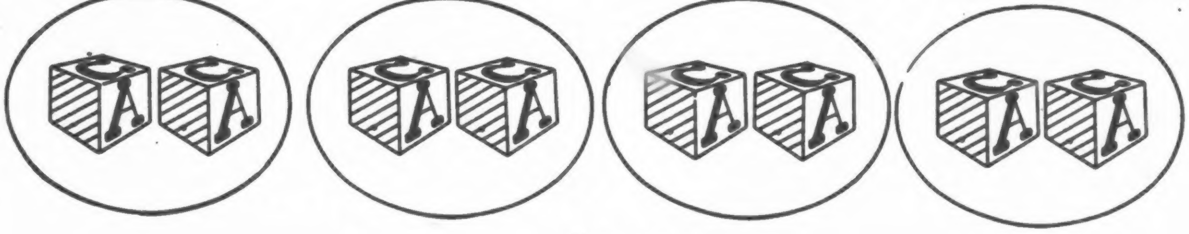
TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	05	1	15

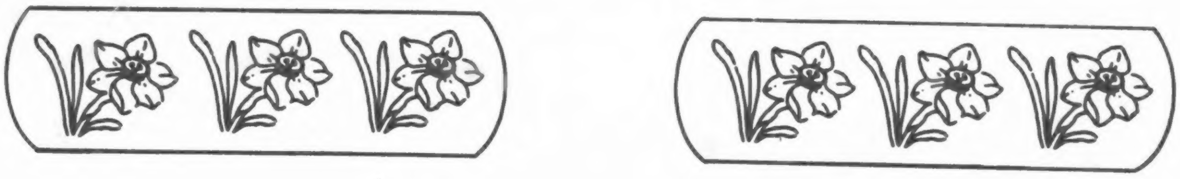
CET I

TL. PTS.	
4	100%
NO. OF PTS.	
3	75
2	50
1	25

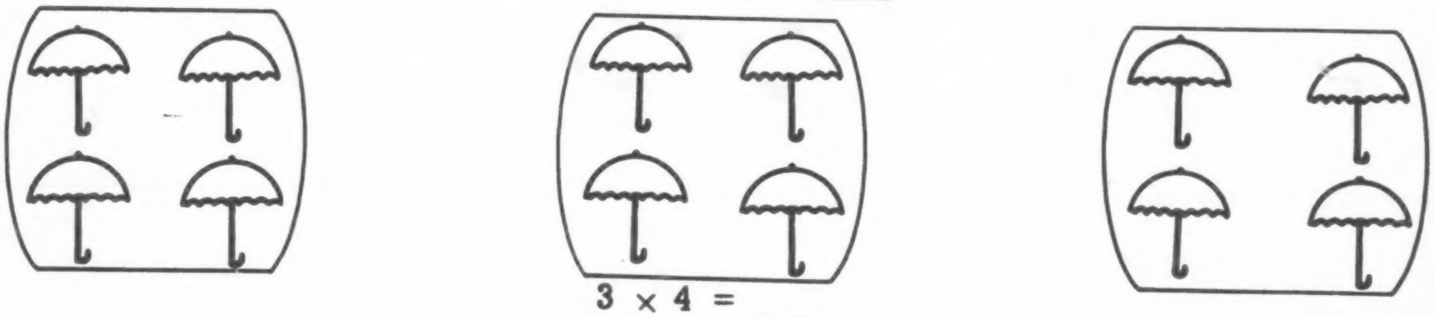
Write the correct numeral in the blank to complete each equation.



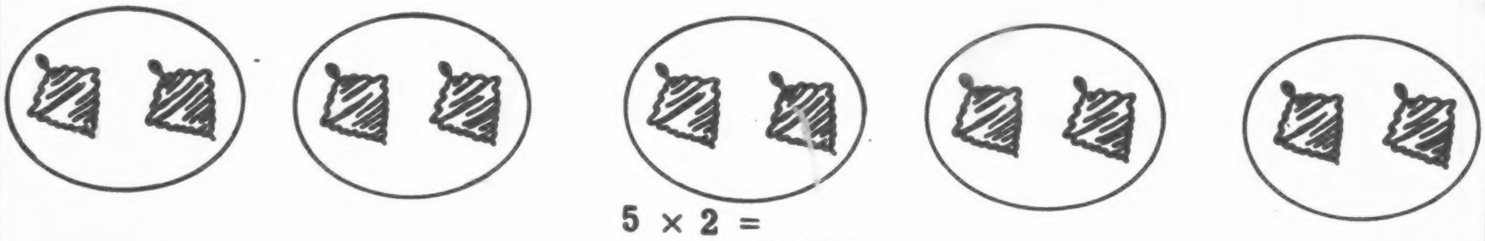
4 sets of 2 = ____



2 sets of 3 = ____



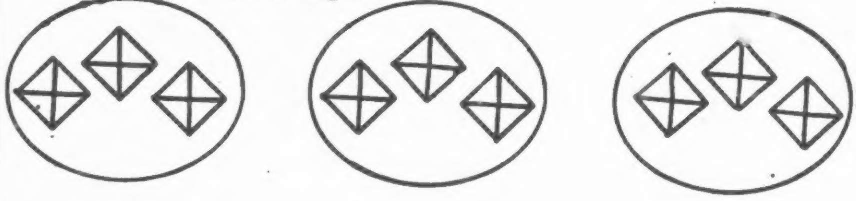
3 × 4 = ____



5 × 2 = ____

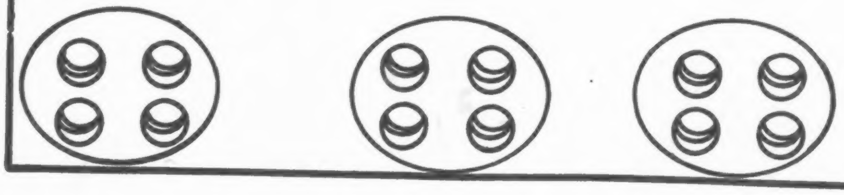
Complete each equation.

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25



3 + 3 + 3 = ____

3 × 3 = ____

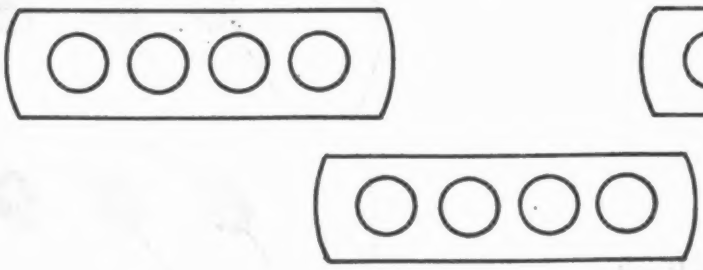


4 + 4 + 4 = ____

3 × 4 = ____

LEVEL	UNIT	SKILL	PAGE
D	05	1	16

Write the correct answers.



How many sets?____

How many in each set?____

There are _3_ sets of _4_ things.

Write this as 3 × 4.

× means "times."

Look at the symbol 3 × 4.

3 is the "number of sets."

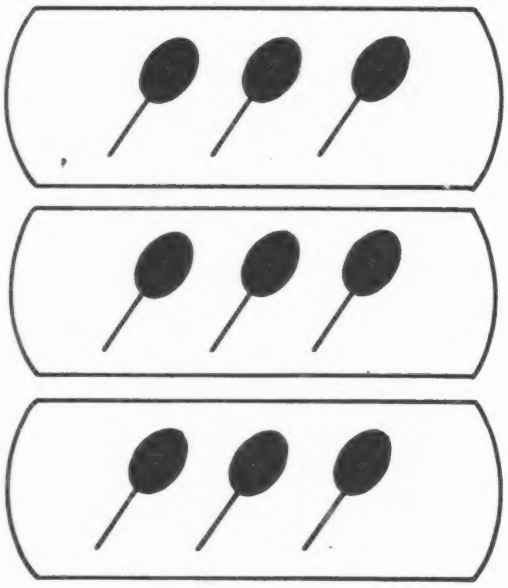
× means "times."

4 is the "number of things in each set."

TOTAL POINTS.	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	05	1	17

Write the correct answers.

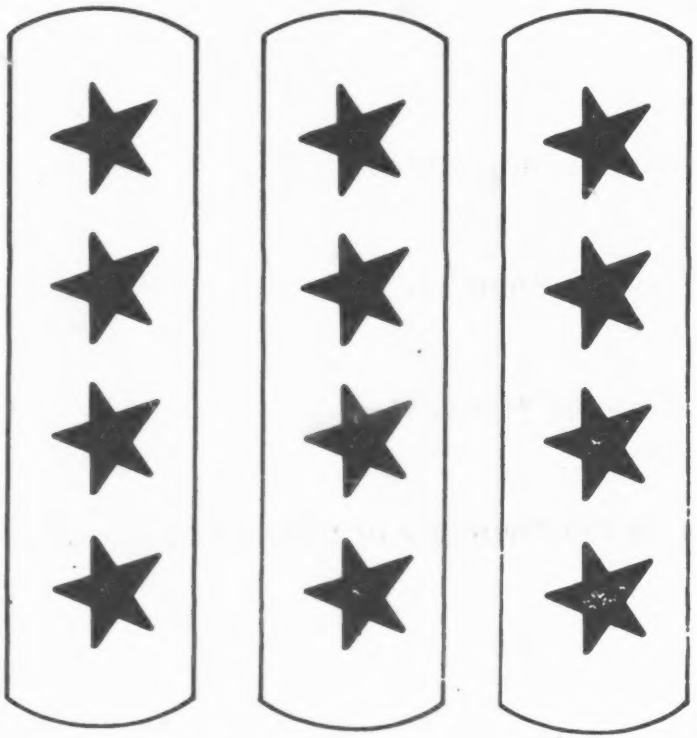


How many sets? 3

How many in each set? ____

3 sets of 3 can be written as

3 × ____.



How many sets? ____

How many in each set? ____

____ sets of ____ can be written as

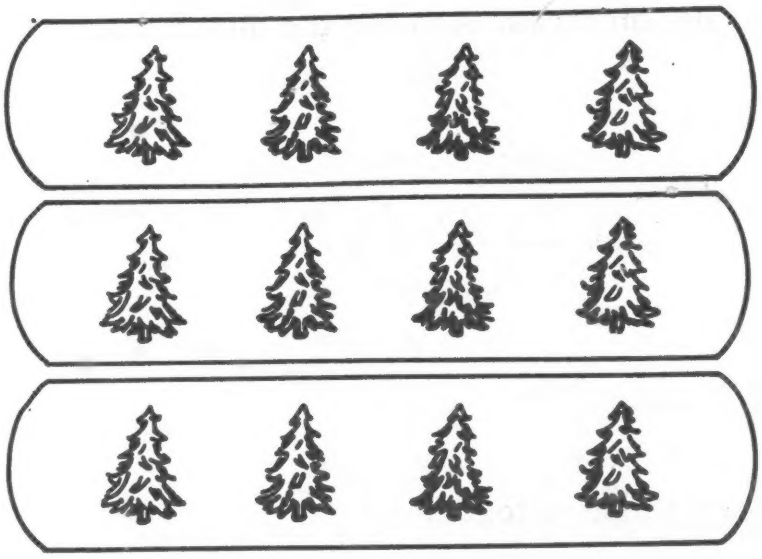
____ × ____.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	05	1	18

Write 3 sets of 4 as 3 × 4.

$$\begin{tikzcd}[row sep=large] 3 \arrow[d, leftrightarrow] & \text{sets of} & 4 \arrow[d, leftrightarrow] \\ 3 & \times & 4 \end{tikzcd}$$



Pick out the expression from those in the box that matches each expression below. Write in the correct answers.

1 × 5
2 × 4
5 × 2
3 × 2
3 × 1
2 × 3

3 sets of 2 3 × 2

1 set of 5 ________

2 sets of 4 2 × 4

5 sets of 2 ________

2 sets of 3 ________

3 sets of 1 ________

TOTAL POINTS	NUMBER CORRECT
6	

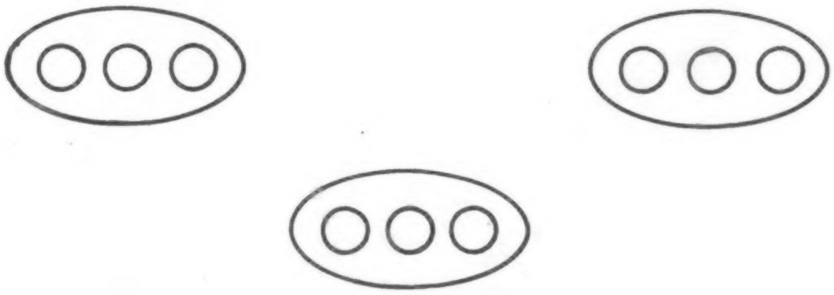
LEVEL	UNIT	SKILL	PAGE
D	05	1	19

Look at the pictures. Answer the questions.

2 sets of 3

How many things altogether? 6

2 sets of ____ = ____



3 sets of ____

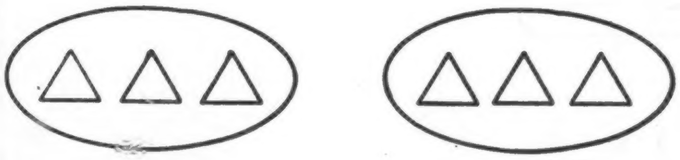
How many things altogether? ____

3 sets of 3 = ____

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
D	05	1	20

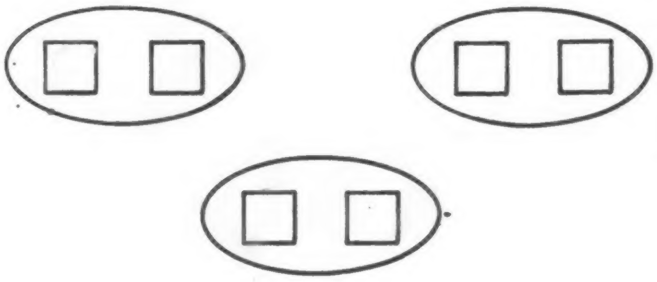
Write the correct answers.



2 sets of 3

How many altogether? ____

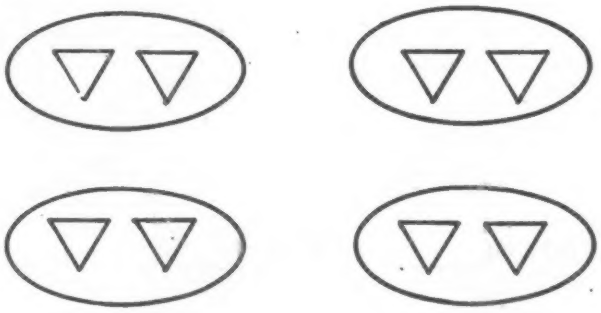
2 sets of ____ = ____



3 sets of ____

How many altogether? ____

3 sets of ____ = ____



4 sets of ____

How many altogether? ____

4 sets of ____ = ____

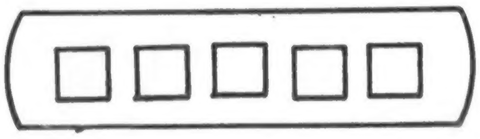
or

4 × ____ = ____

TOTAL POINTS	NUMBER CORRECT
14	

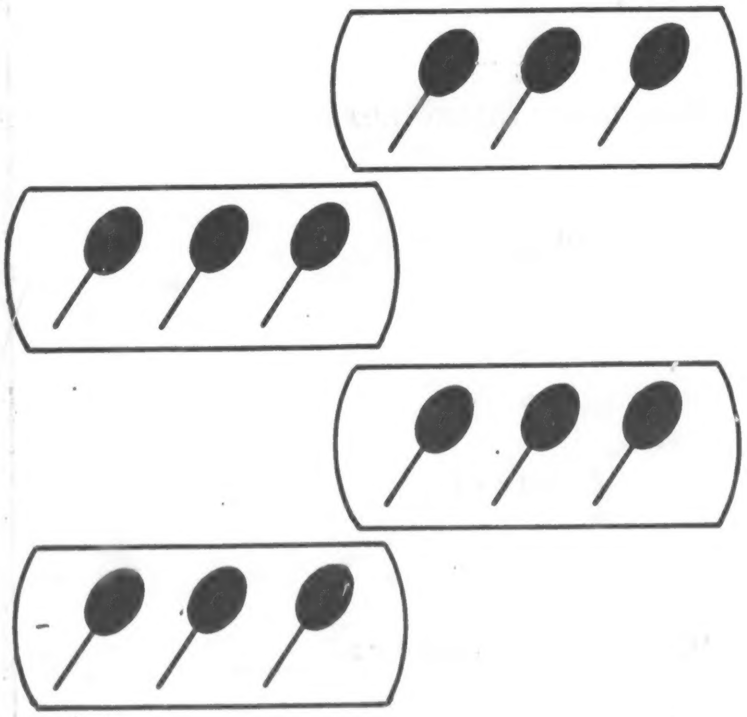
LEVEL	UNIT	SKILL	PAGE
D	05	1	21

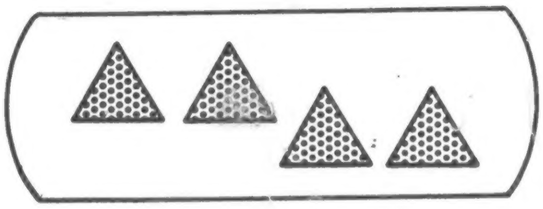
Write an equation for each problem.



1 set of 5 = 1 × 5

1 × 5 = 5





4 sets of ___ = 4 × ___

4 × ___ = 12

1 set of ___ = 1 × ___

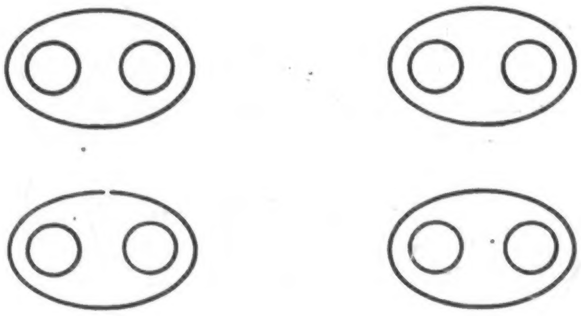
1 × ___ = 4

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	05	1	22

Page 23

Write the correct answers.



How many sets? 4

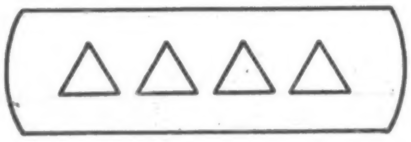
How many in each set? ____

How many altogether? ____

4 sets of ____ = ____

or

4 × ____ = ____



How many sets? ____

How many in each set? ____

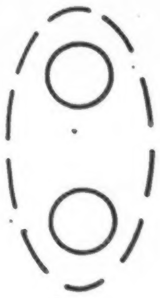
____ × ____ = ____

11

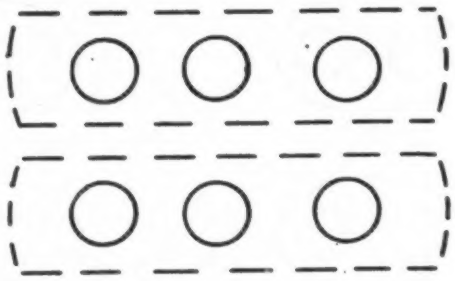
TOTAL POINTS	NUMBER CORRECT
14	

LEVEL	UNIT	SKILL	PAGE
D	05	1	23

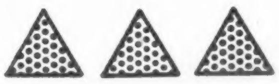
Circle the objects to make the pictures match the description.



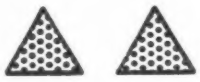
3 sets of 2



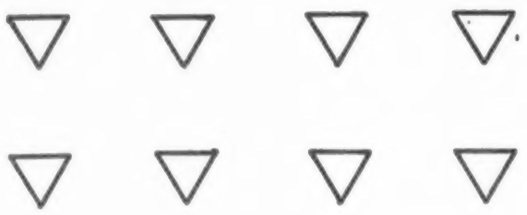
2 sets of 3



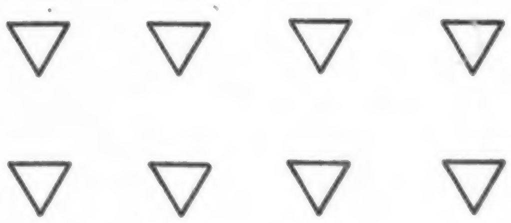
1 set of 3



2 sets of 1



4 sets of 2



2 sets of 4

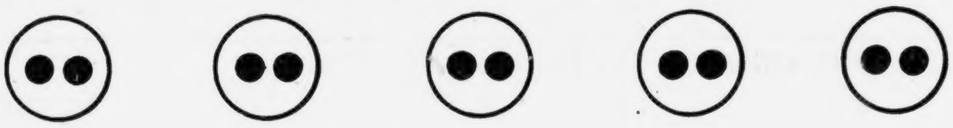
TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
D	05	1	24

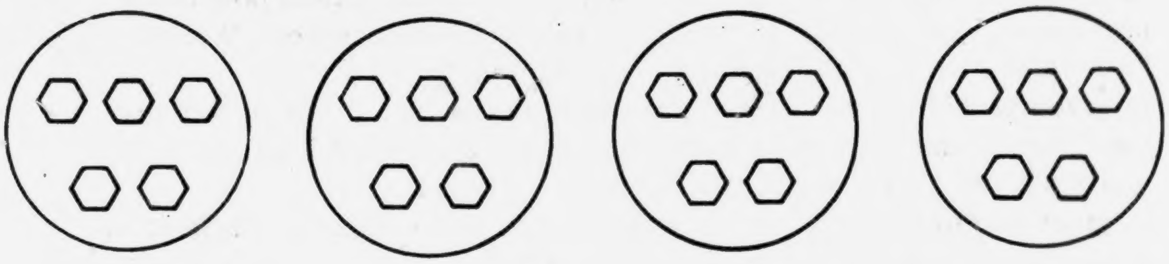
CET II

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

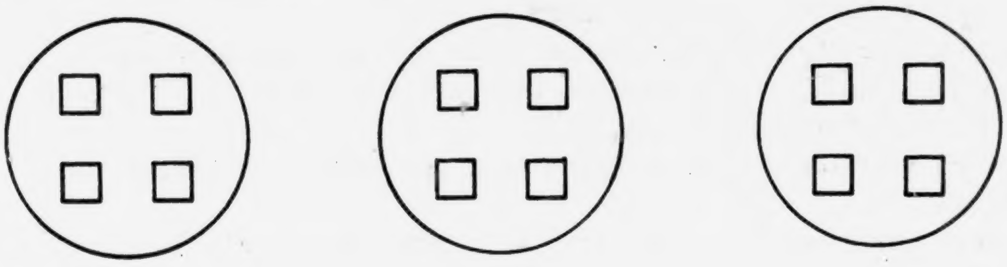
Write the correct numeral in each blank to complete each equation.



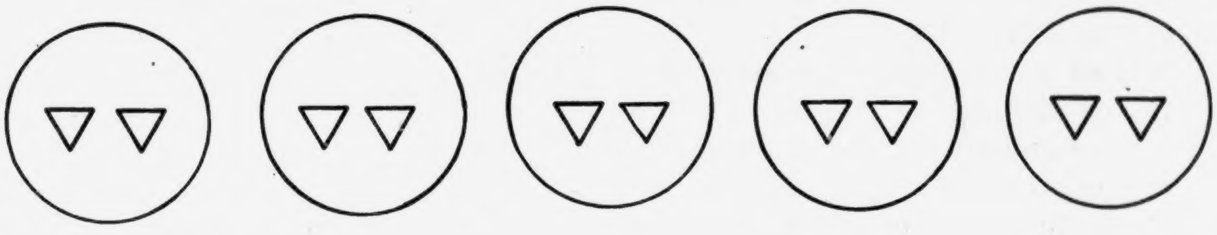
5 sets of 2 = ____



4 sets of 5 = ____



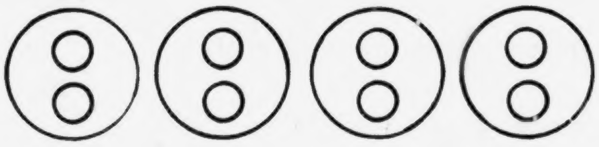
3 × 4 = ____



5 × 2 = ____

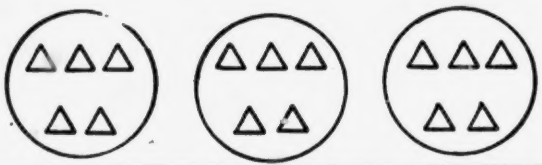
Complete each equation.

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25



2 + 2 + 2 + 2 = ____

4 × 2 = ____



5 + 5 + 5 = ____

3 × 5 = ____

LEVEL	UNIT	SKILL	PAGE
D	05	1	25

LEVEL D, MULTIPLICATION, SKILL 1

OBJECTIVE: Groups sets (or pictured sets) in order to complete statements. Given a picture of six objects grouped into sets of two, completes "3 sets of 2" = ____, and 3 × 2 = ____. Factors no larger than 5.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Is given picture of 6 objects grouped in sets of 2. Finds how many sets, how many objects in each set, how many altogether. Writes "3 sets of 2" as 3 × 2. Reads "×" as "times."	17
2.	Is given picture of 6 objects grouped in sets of 2. Finds how many sets, how many objects in each set, writes 3 × 2 as 3 sets of 2, and 3 sets of 2 as 3 × 2.	
3.	Is given pictured sets, answers questions, and writes multiplication signs. For example, 5 × 2 is "5 sets of 2."	18
4.	Is given pictured sets, fills in number of sets, how many objects in each set, using multiplication sign.	19
5.	Given picture of 6 objects grouped in sets of 2, finds how many altogether. Reads multiplication equation, 3 × 2 = 6, as "3 sets of 2" = 6, and 3 times 2 is equal to 6.	
6.	Answers questions about pictured sets and solves multiplication equations.	20
7.	Answers questions about pictured sets and solves multiplication equations.	
8.	Writes problems such as 4 sets of 2 = 4 × ____ and 4 × ____ = 8 (using pictured sets).	21
9.	Writes and solves problems such as 1 set of ____ = 1 × ____ = ____ (using pictured sets).	
10.	Writes and solves problems such as ____ sets of ____ = 5 × ____ = ____ (using pictured sets).	
11.	Uses pictured sets, solves multiplication equations. For example, 3 × 2 = ____.	22
12.	Uses pictured sets, writes what each picture shows, and solves equations.	
13.	Uses pictured sets, writes what each picture shows, and solves equations.	23
14.	Circles pictured objects to make picture match given multiplication equation. Solves equation.	24
15.	Circles pictured objects to make picture match given multiplication equation. Solves equation.	
16.	CET I.	
	CET II.	25

Circle pages that are to be done.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham STUDENT NUMBER ____________

SCHOOL STAMP ____________

GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									
3-3	J.J.	1			read stud. pg.						
			2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
3-6	J.J.	1	16	C.E.T.				4/4	100	4/4	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES									

P1 – 1968

Susan is now ready to work on Skill 4 as indicated by her Pre-test score. Remember to assign the second part of the CET for Skill 3 to serve as a further test measure.

For our purposes, Susan will not be able to work the CET thus requiring a prescription for Skill 4.

Next, you will find the STS Booklet for Skill 4. Examine the booklet to decide on Susan's prescription for Skill 4 and write your prescription on the same sheet you used for Skill 1.

Compare your prescription with the prescription on Page 75.

CET I

Multiply.

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

9
× 1
___

1
× 1
___

7
× 0
___

10
× 0
___

0
× 1
___

1
× 10
___

4
× 1
___

1
× 5
___

0 × 3 = ___

3 × 1 = ___

1 × 7 = ___

1 × 6 = ___

Multiply.

TL. PTS.	
7	100%
NO. OF PTS.	%
6	86
[✓ 5]	[✓ 71]
4	57
3	43
2	29
1	14

2
× 5
10

3
× 2
6

6
× 4
10 X

5
× 3
15

3
× 4
12

6
× 2
8 X

4
× 4
16

ipi
MATHEMATICS

Name ______________________ Date ______________________

Class ______________________ Number ______________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff

LEARNING RESEARCH AND DEVELOPMENT CENTER

University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

the staff of Appleton-Century-Crofts

under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, MULTIPLICATION (05), SKILL 4

TO THE STUDENT

Can you do these problems? Write your answers in the blanks.

4 × 2 = ____

3 × 4 = ____

$$\begin{array}{r} 5 \\ \underline{\times 1} \\ \underline{\quad} \end{array} \qquad \begin{array}{r} 3 \\ \underline{\times 9} \\ \underline{\quad} \end{array}$$

You will practice problems like these in this booklet.

Answers

8, 12

5, 27

Complete each equation.

0 × 0 = 0

0 × 1 = ____

0 × 2 = ____

1 × 0 = ____

1 × 1 = ____

1 × 2 = ____

2 × 0 = ____

2 × 1 = ____

2 × 2 = ____

3 × 0 = ____

3 × 1 = ____

3 × 2 = ____

4 × 0 = ____

4 × 1 = ____

4 × 2 = ____

5 × 0 = ____

5 × 1 = ____

5 × 2 = ____

TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
D	05	4	1

Complete each equation.

0 × 3 = 0 0 × 4 = ___ 0 × 5 = ___

1 × 3 = ___ 1 × 4 = ___ 1 × 5 = ___

2 × 3 = ___ 2 × 4 = ___ 2 × 5 = ___

3 × 3 = ___ 3 × 4 = ___ 3 × 5 = ___

4 × 3 = ___ 4 × 4 = ___ 4 × 5 = ___

5 × 3 = ___ 5 × 4 = ___ 5 × 5 = ___

TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
D	05	4	2

Write the answers.

3 × 2 = 6

4 × 1 = ____

5 × 5 = ____

5 × 3 = ____

2 × 5 = ____

3 × 4 = ____

2 × 4 = ____

1 × 1 = ____

4 × 2 = ____

5 × 4 = ____

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	05	4	3

Write the answers.

4 × 4 = ____

2 × 3 = 6

4 × 3 = ____

2 × 2 = ____

5 × 2 = ____

5 × 1 = ____

3 × 3 = ____

4 × 5 = ____

3 × 5 = ____

3 × 1 = ____

For extra practice, do Page 9.

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	05	4	4

Write the answers.

$\begin{array}{r}1\\ \times 1\\ \hline 1\end{array}$ $\begin{array}{r}2\\ \times 3\\ \hline\end{array}$ $\begin{array}{r}4\\ \times 2\\ \hline\end{array}$ $\begin{array}{r}3\\ \times 3\\ \hline\end{array}$

$\begin{array}{r}4\\ \times 4\\ \hline\end{array}$ $\begin{array}{r}5\\ \times 5\\ \hline\end{array}$ $\begin{array}{r}3\\ \times 5\\ \hline\end{array}$ $\begin{array}{r}0\\ \times 4\\ \hline\end{array}$

$\begin{array}{r}3\\ \times 4\\ \hline\end{array}$ $\begin{array}{r}5\\ \times 1\\ \hline\end{array}$ $\begin{array}{r}4\\ \times 1\\ \hline\end{array}$ $\begin{array}{r}5\\ \times 2\\ \hline\end{array}$

$\begin{array}{r}2\\ \times 2\\ \hline\end{array}$ $\begin{array}{r}2\\ \times 1\\ \hline\end{array}$ $\begin{array}{r}0\\ \times 3\\ \hline\end{array}$ $\begin{array}{r}6\\ \times 1\\ \hline\end{array}$

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
D	05	4	5

Write the answers.

6 × 2 12	5 × 5	4 × 5	6 × 5
9 × 3	7 × 2	0 × 10	8 × 5
8 × 5	9 × 2	7 × 5	7 × 4
8 × 3	6 × 3	7 × 1	6 × 0

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
D	05	4	6

Write the answers.

8 × 6 48	0 × 9	4 × 2	9 × 5
7 × 6	7 × 7	5 × 5	10 × 5
5 × 10	10 × 3	8 × 4	8 × 0
9 × 4	7 × 3	8 × 2	10 × 3
10 × 2	8 × 4	10 × 1	10 × 0

For extra practice, do Page 10.

TOTAL POINTS	NUMBER CORRECT
20	

LEVEL	UNIT	SKILL	PAGE
D	05	4	7

CET I

TL. PTS.	
21	100%
NO. OF PTS.	%
20	95
19	90
18	86
17	81
16	76
15	71
14	67
13	62
12	57
11	52
10	48
9	43
8	38
7	33
6	29
5	24
4	19
3	14
2	10
1	5

Multiply.

$$\begin{array}{r}3\\ \times 4\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}2\\ \times 5\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}9\\ \times 3\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}7\\ \times 2\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}4\\ \times 4\\ \hline \\ \hline\end{array}$$

$$\begin{array}{r}8\\ \times 2\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}6\\ \times 5\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}9\\ \times 4\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}7\\ \times 3\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}5\\ \times 3\\ \hline \\ \hline\end{array}$$

$$\begin{array}{r}8\\ \times 5\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}7\\ \times 4\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}3\\ \times 2\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}2\\ \times 4\\ \hline \\ \hline\end{array}\qquad\begin{array}{r}6\\ \times 3\\ \hline \\ \hline\end{array}$$

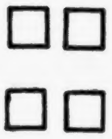
$4 \times 8 =$ ____ $5 \times 7 =$ ____

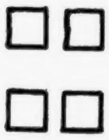
$3 \times 5 =$ ____ $4 \times 5 =$ ____

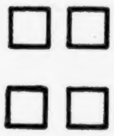
$2 \times 6 =$ ____ $3 \times 3 =$ ____

Fill in the blank to make a true number sentence.

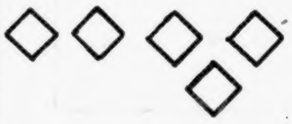
TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

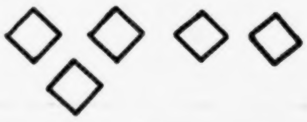






$3 \times$ ____ $= 12$





____ $\times 5 = 10$

LEVEL	UNIT	SKILL	PAGE
D	05	4	8

Write the correct answers.

5 × 4 = ____

2 × 3 = 6

3 × 4 = ____

2 × 1 = ____

4 × 4 = ____

5 × 5 = ____

3 × 3 = ____

4 × 2 = ____

5 × 3 = ____

1 × 1 = ____

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
D	05	4	9

Write the answers.

0	6	5	4
× 10	× 8	× 3	× 4
0			
10	9	5	2
× 5	× 4	× 5	× 10
6	5	3	9
× 6	× 4	× 6	× 3
5	4	3	5
× 0	× 10	× 7	× 3

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
D	05	4	10

TL. PTS.	
21	100%
NO. OF PTS.	%
20	95
19	90
18	86
17	81
16	76
15	71
14	67
13	62
12	57
11	52
10	48
9	43
8	38
7	33
6	29
5	24
4	19
3	14
2	10
1	5

CET II

Multiply.

6	10	8	8	10
× 5	× 4	× 3	× 2	× 3
____	____	____	____	____
7	6	6	9	7
× 2	× 4	× 2	× 3	× 4
____	____	____	____	____
7	5	3	7	5
× 5	× 5	× 2	× 3	× 3
____	____	____	____	____

5 × 8 = ____

4 × 3 = ____

5 × 4 = ____

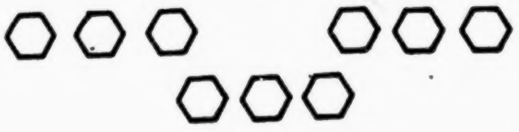
3 × [illegible] = ____

2 × 9 = ____

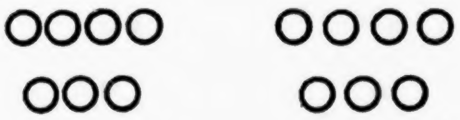
4 × 4 = ____

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Put the correct numeral in the blank.



____ × 3 = 9



2 × ____ = 14

LEVEL D, MULTIPLICATION, SKILL 4

OBJECTIVE: Finds products to demonstrate oral and written mastery of multiplication (without pictures). Factors of 2, 3, 4, and 5 tables.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Multiplies horizontally with products to 10.	
2.	Multiplies horizontally with products to 25.	
3.	Multiplies horizontally with products to 25.	
4.	Multiplies horizontally with products to 20.	9
5.	Multiplies factors vertically with products to 25.	
6.	Multiplies vertically with products to 40.	
7.	Multiplies vertically with products to 50.	10
8.	CET I.	
	CET II.	11

Circle pages that are to be done.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham
STUDENT NUMBER
SCHOOL STAMP
GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J	Pre-test									
3-3	J.J.	1			read Stud. pg.						
			2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
			16	C.E.T.				4/4	100	4/4	100
3-6	J.J.	3	17P	C.E.T.	2nd pt. only					5/7	71
3-7	J.J.	4			read Stud. pg.						
			1			18	18				
			2			13	13				
			3			10	3				
			5			16	16				
			6	12		16	14				
			7			20	19				
			8	C.E.T.				4/4	100	2/2	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES									

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Notice that on the second half of the CET for Skill 4, Susan had mastery. Even though her Pre-test score was below mastery, she is only assigned the CET for Skill five.

As shown on the next page, Susan acquired mastery on both parts. This indicates she is ready for work in Skill 7.

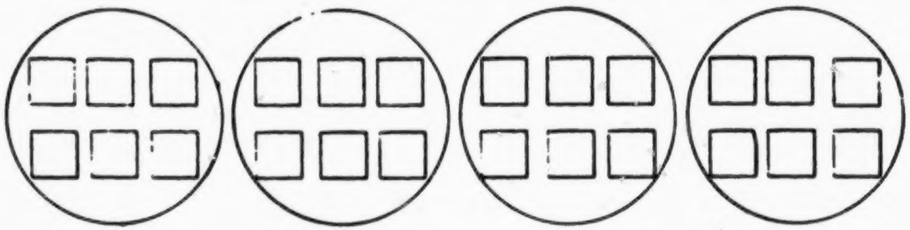
We must first assign the second half of the CET for Skill 6 as a further check. Let's again assume that she does not master it.

Add this page to your prescription.

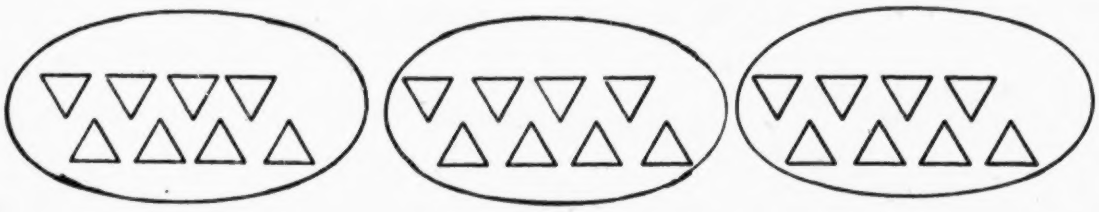
CET I

Fill in each blank to make an equation.

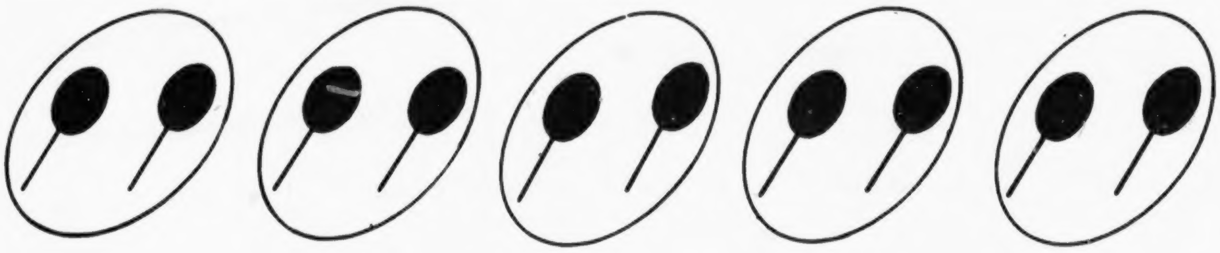
TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25



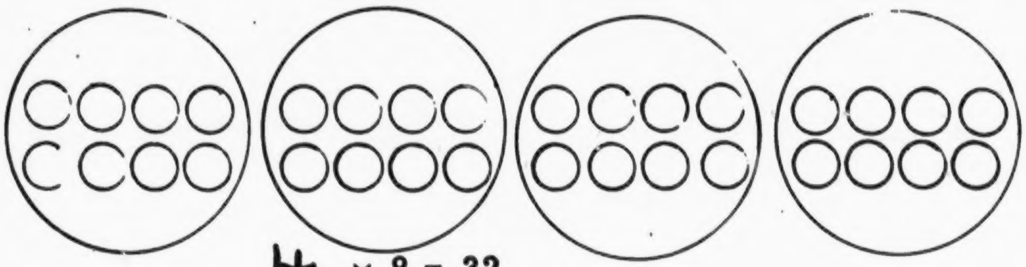
4 × 6 = 24



3 × 8 = 24



5 × 2 = 10



4 × 8 = 32

Multiply.

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
4	67
3	50
2	33
1	17

2 × 6 = 12　　5 × 3 = 15　　4 × 7 = 28

6 × 2 = 12　　3 × 5 = 15　　7 × 4 = 28

LEVEL	UNIT	SKILL	PAGE
D	05	5	7

CET I

Multiply.

2 × 7 = ____ 4 × 10 = ____

7 × 2 = ____ 10 × 4 = ____

3 × 6 = ____ 2 × 8 = ____

6 × 3 = ____ 8 × 2 = ____

3 × 9 = ____ 4 × 3 = ____

9 × 3 = ____ 3 × 4 = ____

5	7	4	9	5	4
× 7	× 5	× 9	× 4	× 4	× 5
____	____	____	____	____	____

TL. PTS.	
18	100%
NO. OF PTS.	%
17	94
16	89
15	83
14	78
13	72
12	67
11	61
10	56
9	50
8	44
7	39
6	33
5	28
4	22
3	17
2	11
1	6

Label the factors and the product on the lines below each problem.

4 × 3 = 12

factor product product

X

6 × 5 = 30

factor product product

X

TL. PTS.	
6	100%
NO. OF PTS.	%
5	83
[✓ 4]	[✓ 67]
3	50
2	33
1	17

LEVEL	UNIT	SKILL	PAGE
D	05	6	9

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham

STUDENT NUMBER

SCHOOL STAMP

GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									
3-3	J.J.				read stud. pg.						
		1	2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
			16	C.E.T.				4/4	100	4/4	100
3-6	J.J.	3	17P	C.E.T.	2nd pt. only					5/7	71
3-7	J.J.	4			read stud. pg.						
			1			18	18				
			2			13	13				
			3			10	3				
			5			18	16				
			6	12		16	14				
			7			20	19				
			8	C.E.T.				4/4	100	2/2	100
3-8	J.J.	5	7p	C.E.T.				6/6	100	6/6	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES		3-2						74	

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IPI MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Susan Markham STUDENT NUMBER ____________ UNIT D-Mult.

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-8	J.J.	6	13P	C.E.T.	(2nd part only)					4/6	67

As shown from the 2nd half of the CET for Skill 6 and Susan's Pre-test score for Skill 7. She is now ready for a prescription.

Here is the STS Booklet for Skill 7. Examine the booklet and write a prescription for Skill 7 (on same form).

Compare your assignment with that on Page 94.

ipi
MATHEMATICS

Name ______________________ Date ______________________

Class ______________________ Number ______________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff

LEARNING RESEARCH AND DEVELOPMENT CENTER

University of Pittsburgh

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- *written and revised by*

the staff of Appleton-Century-Crofts

under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL D, MULTIPLICATION (05), SKILL 7

TO THE STUDENT

What are the numbers called that are multiplied together?________________

$$\mathbf{3 \times 2 = 6}$$

What is the answer called?________________

This booklet will teach you to use the words product and factor.

Answers

factors, product

The numbers that are multiplied together are called factors.

The answer to a multiplication question is called the product.

$$\underset{\text{Factor}}{\underset{\uparrow}{2}} \quad \times \quad \underset{\text{Factor}}{\underset{\uparrow}{3}} \quad = \quad \underset{\text{Product}}{\underset{\uparrow}{6}}$$

In this problem the factors are 2 and ____ and the product is ____.

Circle the factors.

$\boxed{5} \times \boxed{2} = 10$

$3 \times 1 = 3$

$3 \times 4 = 12$

$4 \times 5 = 20$

Circle the products.

$4 \times 1 = \boxed{4}$

$3 \times 3 = 9$

$3 \times 5 = 15$

$2 \times 2 = 4$

For extra practice, do Page 6.

TOTAL POINTS	NUMBER CORRECT
15	

LEVEL	UNIT	SKILL	PAGE
D	05	7	1

The numbers we multiply together are called factors.

$$2 \times 8 = 16$$

The answer is called the product.

Circle the factors.

[✓ 3]
× [✓ 5]
15

0 × 8 = 0

1 × 1 = 1

4 × 3 = 12

3 × 2 = 6

6
× 2
12

5
× 2
10

3 × 1 = 3

Circle the products.

2 × 9 = [✓ 18]

3 × 6 = 18

5 × 1 = 5

3
× 3
9

4 × 4 = 16

TOTAL POINTS	NUMBER CORRECT
21	

LEVEL	UNIT	SKILL	PAGE
D	05	7	2

Write the word product or factor in the blanks.

$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array} \leftarrow$ product

$6 \times \underset{\uparrow}{2} = 12$ ______

$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \leftarrow$ ______

$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array} \leftarrow$ ______

$\begin{array}{r} 2 \\ \times 0 \\ \hline 0 \end{array} \leftarrow$ ______

$\underset{\uparrow}{3} \times 6 = 18$ ______

$6 \times 1 = \underset{\uparrow}{6}$ ______

$4 \times 5 = \underset{\uparrow}{20}$ ______

$\begin{array}{r} 5 \\ \times 3 \leftarrow \\ \hline 15 \end{array}$ ______

For extra practice, do Page 7.

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
D	05	7	3

Write the word product or factor in the blanks.

$$\begin{array}{r} 8 \\ \times 1 \\ \hline 8 \end{array} \leftarrow \underline{\text{product}}$$

$$\begin{array}{c} 2 \times \overset{}{1} = 2 \\ \uparrow \\ \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 3 \\ \times 1 \\ \hline 3 \end{array} \nwarrow \underline{\hspace{2cm}}$$

$$\begin{array}{l} 4 \times 2 = 8 \\ \uparrow \\ \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 5 \\ \times 0 \\ \hline 0 \end{array} \leftarrow \underline{\hspace{2cm}}$$

$$\begin{array}{c} 3 \times 3 = 9 \\ \uparrow \\ \underline{\text{factor}} \end{array}$$

$$\begin{array}{r} 0 \times 8 = 0 \\ \uparrow \\ \underline{\hspace{2cm}} \end{array}$$

$$\begin{array}{r} 9 \\ \times 1 \\ \hline 9 \end{array} \leftarrow \underline{\hspace{2cm}}$$

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
D	05	7	4

CET I

Circle each factor and draw a box around each product.

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

$4 \times 7 = 28$

$2 \times 9 = 18$

Write the word product or factor for each numeral.

6 ← ______ 4 ← ______

$\underline{\times 3}$ ← ______ $\underline{\times 4}$ ← ______

18 ← ______ 16 ← ______

Mary bought 3 bags of marbles. Each bag had 10 marbles in it. How many marbles does Mary have?____ marbles

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

John works in a grocery store 3 days a week. How many days does he work in 3 weeks?____ days

Fill in the blanks.

2 X 5 = 10

factor factor product

In this problem the factors are 2 and 5, and the product is 10.

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

In this problem the factors are ____ and ____, and the product is 8.

2 X 0 = 0

The factors are ____ and ____, the product is ____.

3 X 4 = 12

The factors are ____ and ____, and the product is ____.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
D	05	7	6

Write product or factor in each blank.

3 × 2 = 6
↑ ↑ ↑
factor factor product

3
×2
6 ← product

4 × 3 = 12
↑
factor

3 × 1 = 3
↑
factor

4 ← ______
×2
8

6 × 2 = 12
↑
______

2
×2
4 ← ______

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
D	05	7	7

CET II

Circle each factor and draw a box around each product.

TL. PTS.	
12	100%
NO. OF PTS.	%
11	92
10	83
9	75
8	67
7	58
6	50
5	42
4	33
3	25
2	17
1	8

$4 \times 3 = 12$

$3 \times 8 = 24$

Write the word product or factor for each numeral.

7 ← ______
×3 ← ______
21 ← ______

2 ← ______
×8 ← ______
16 ← ______

Joey wants to buy six pieces of candy. Each piece costs 2¢.

How much money does he need? ____¢

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Mary has 4 dolls. Jane has 3 times as many dolls as Mary has. How many dolls does Jane have?____ dolls

LEVEL	UNIT	SKILL	PAGE
D	05	7	8

LEVEL D, MULTIPLICATION, SKILL 7

OBJECTIVE: Uses the terms "product" and "factor" to label correctly the parts of a multiplication problem.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Identifies product and factors by marking each as directed.	6
2.	Identifies product and factors by marking each as directed.	
3.	Writes "product" or "factor" to identify the parts of the given problems.	7
4.	Writes "product" or "factor" to identify the parts of the given problems.	
5.	CET I.	8
	CET II.	

Circle pages that are to be done.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham
STUDENT NUMBER ______
SCHOOL STAMP ______
GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									
3-3	J.J.	1			read stud.pg.						
			2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
			16	C.E.T.				4/4	100	4/4	100
3-6	J.J.	3	17p	C.E.T.	2nd pt. only					5/7	71
3-7	J.J.	4			read stud. pg.						
			1			18	18				
			2			13	13				
			3			10	3				
			5			16	16				
			6	12		16	14				
			7			20	19				
			8	C.E.T.				4/4	100	2/2	100
3-8	J.J.	5	7P	C.E.T.				6/6	100	6/6	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES		3-2							

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MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Susan Markham STUDENT NUMBER ________ UNIT D-Mult.

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-8	J.J.	6	13P	C.E.T.	(2nd part only)					4/6	67
3-9	J.J.	7			read stud. pg.						
			1	02		15	15				
			2	02		21	10				
			3			9	5				
			7	03		4	4				
			5	C.E.T.				12/12	100	2/2	100

As shown on the previous Prescription Sheet, Susan has received a score of 100% on her CET for Skill 7.

Susan has now worked in and shown mastery of each skill in which she was deficient in her Pre-test.

Her next assignment is for the D-Mult. Post-test.

Indicate this on your Prescription Sheet.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Susan Markham STUDENT NUMBER

SCHOOL STAMP

GRADE 4 ROOM UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									
3-3	J.J.	1			read stud. pg.						
			2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
			16	C.E.T.				4/4	100	4/4	100
3-6	J.J.	3	17p	C.E.T.	2nd pt. only					5/7	71
3-7	J.J.	4			read stud. pg.						
			1			18	18				
			2			13	13				
			3			10	3				
			5			16	16				
			6	12		16	14				
			7			20	19				
			8	C.E.T.				4/4	100	2/2	100
3-8	J.J.	5	7p	C.E.T.				6/6	100	6/6	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
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11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50						
2	5	5	100						
3	8	8	100						
④	20	3	15						
⑤	5	0	0						
6	5	5	100						
⑦	5	0	0						
8	5	5	100						
DATES		3-2							

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IPI MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Susan Markham STUDENT NUMBER ______ UNIT D-Multiplication

SKILL BOOKLETS								CURRICULUM TEST			
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	PART 1		PART 2	
								NO. OF POINTS	%	NO. OF POINTS	%
3-8	J.J.	6	13	C.E.T.	(2nd pt. only)					4/6	67
3-9	J.J.	7									
			1	02		15	15				
			2	02		21	10				
			3			9	5				
			7	03		4	4				
			5	C.E.T.				12/12	100	2/2	100
3-10	J.J.	Post-test									

Here is a copy of Susan's performance on her D-Mult. Post-test.

Examine the test and notice how the Aide recorded her results on the Prescription Sheet.

Record this information on the first page of your Prescription Sheet. Also, close out the Prescription Sheet by writing the word "Mastery" in the upper right hand corner with the date and your initials.

ipi MATHEMATICS POST-TEST

Name Susan Markham
Date 3-10
Class 4
Number 1234

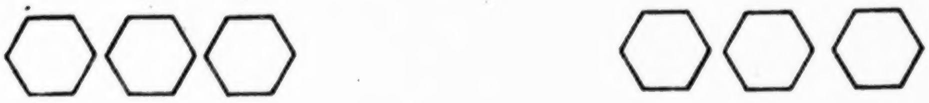
LEVEL D, MULTIPLICATION (05)

SKILL 1

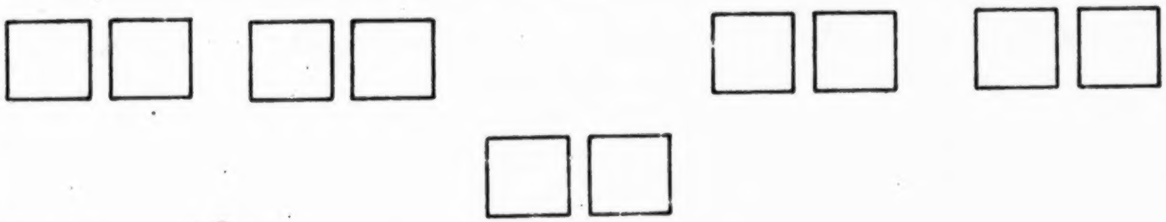
TL. PTS.	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Multiplication: Introduces multiplication facts through structured sets; applies facts to solve word problems.

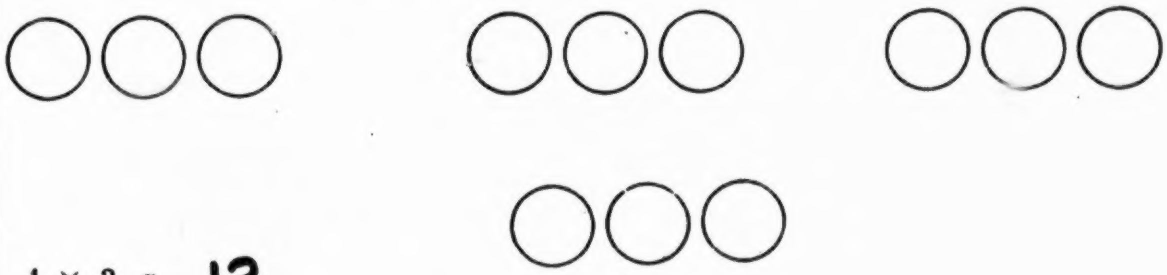
Complete each equation.



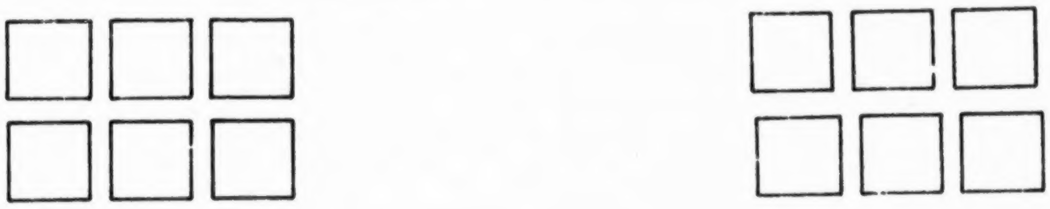
2 × 3 = 6



5 × 2 = 10



4 × 3 = 12

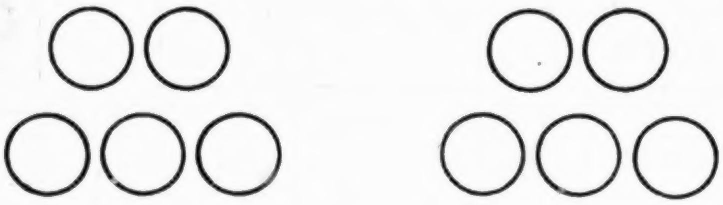


2 × 6 = 12

D . MULTIPLICATION (05) POST-TEST SKILL 2

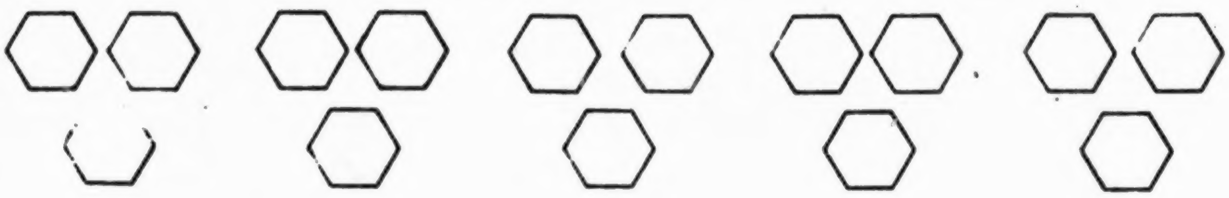
TL PTS	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Complete each equation.



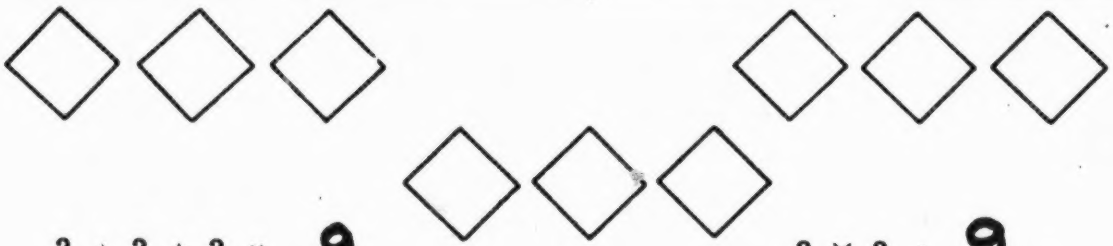
5 + 5 = 10

2 × 5 = 10



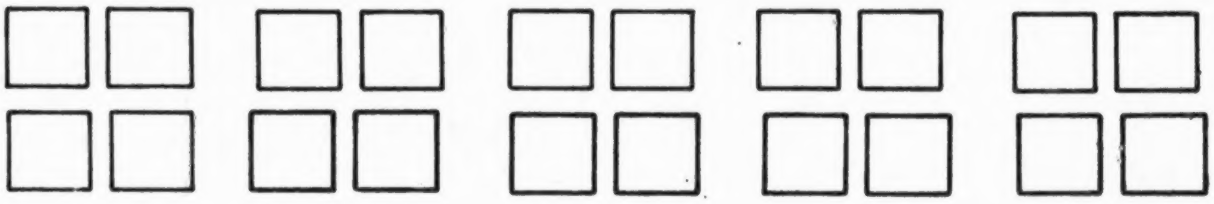
3 + 3 + 3 + 3 + 3 = 15

5 × 3 = 15



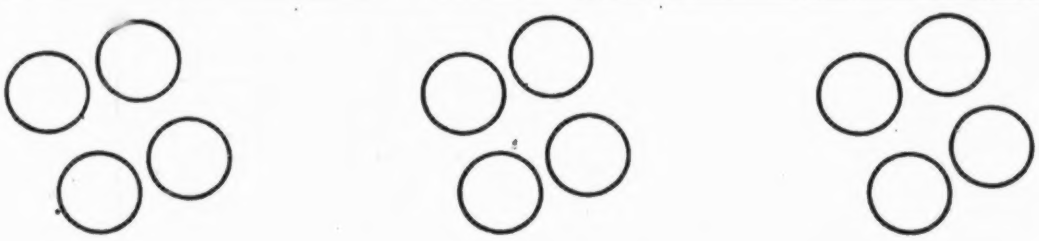
3 + 3 + 3 = 9

3 × 3 = 9



4 + 4 + 4 + 4 + 4 = ____

5 × 4 = ____



4 + 4 + 4 = 12

3 × 4 = 12

D MULTIPLICATION (05) POST-TEST SKILL 3

[illegible]	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

Multiply.

$$\begin{array}{r} 7 \\ \times\ 1 \\ \hline 7 \end{array} \qquad \begin{array}{r} 8 \\ \times\ 0 \\ \hline 0 \end{array} \qquad \begin{array}{r} 1 \\ \times\ 9 \\ \hline 9 \end{array} \qquad \begin{array}{r} 0 \\ \times\ 3 \\ \hline 0 \end{array}$$

6 × 1 = 6

0 × 4 = 0

1 × 1 = 1

2 × 0 = 0

D MULTIPLICATION (05) POST-TEST SKILL 4

TL. PTS.	
20	100%
NO. OF PTS.	%
19	95
[✓ 18]	[✓ 90]
17	85
16	80
15	75
14	70
13	65
12	60
11	55
10	50
9	45
8	40
7	35
6	30
5	25
4	20
3	15
2	10
1	5

Multiply.

$$\begin{array}{r} 5 \\ \times\ 3 \\ \hline 15 \end{array} \qquad \begin{array}{r} 6 \\ \times\ 4 \\ \hline 24 \end{array} \qquad \begin{array}{r} 3 \\ \times\ 2 \\ \hline 6 \end{array} \qquad \begin{array}{r} 8 \\ \times\ 3 \\ \hline 24 \end{array} \qquad \begin{array}{r} 7 \\ \times\ 5 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 9 \\ \times\ 2 \\ \hline 18 \end{array} \qquad \begin{array}{r} 10 \\ \times\ 3 \\ \hline 30 \end{array} \qquad \begin{array}{r} 9 \\ \times\ 5 \\ \hline 42 \end{array} \text{ X} \qquad \begin{array}{r} 4 \\ \times\ 5 \\ \hline 20 \end{array} \qquad \begin{array}{r} 9 \\ \times\ 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 6 \\ \times\ 2 \\ \hline 12 \end{array} \qquad \begin{array}{r} 4 \\ \times\ 4 \\ \hline 16 \end{array} \qquad \begin{array}{r} 0 \\ \times\ 5 \\ \hline 0 \end{array} \qquad \begin{array}{r} 7 \\ \times\ 4 \\ \hline 24 \end{array} \text{ X} \qquad \begin{array}{r} 5 \\ \times\ 2 \\ \hline 10 \end{array}$$

3 × 1 = 3

5 × 10 = 50

2 × 8 = 16

3 × 7 = 21

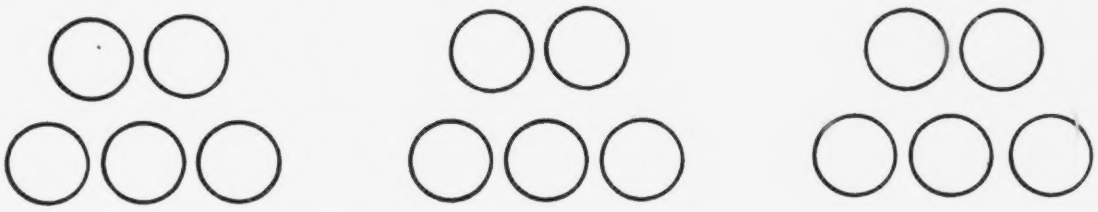
4 × 2 = 8

D MULTIPLICATION (05) POST-TEST

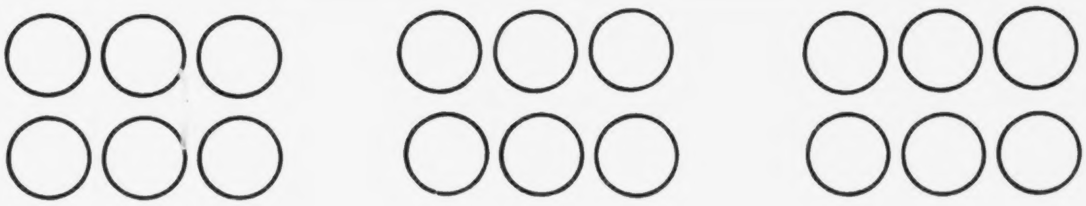
SKILL 5

TL PTS	
5	100 %
NO PTS	%
4	80
3	60
2	40
1	20

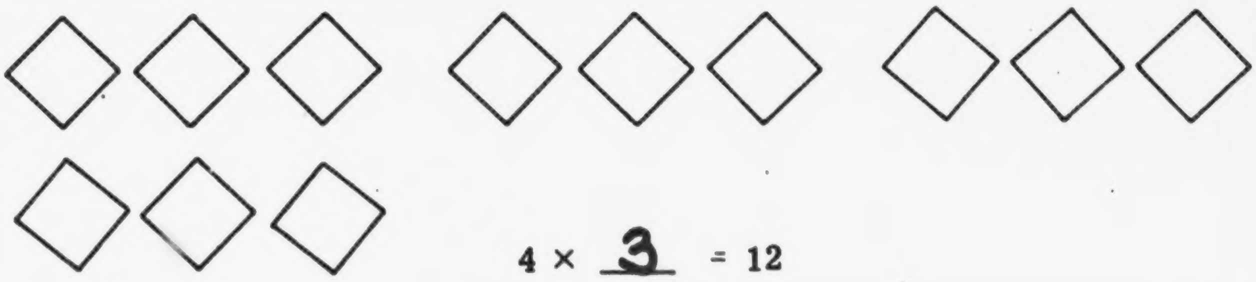
Complete each equation.



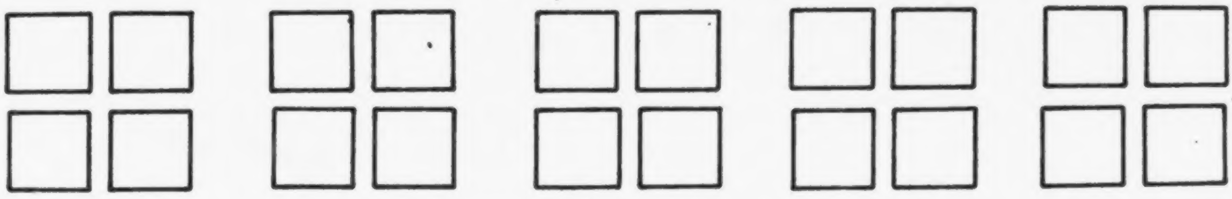
3 × 5 = 15



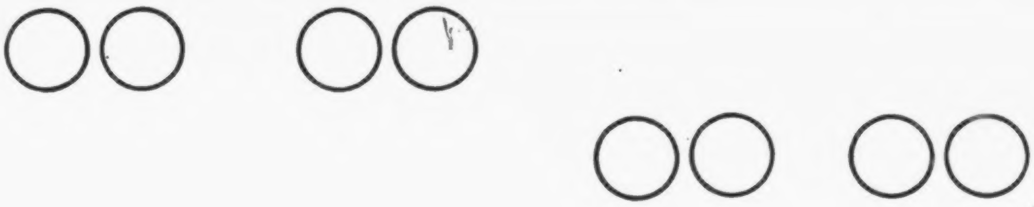
3 × 6 = 18



4 × 3 = 12



5 × 4 = 20



4 × 2 = 8

D MULTIPLICATION (05) POST-TEST SKILL 6

PTS	
6	100
5	83
4	67
3	50
2	33
1	17

Multiply.

4 × 3 = 12

3 × 4 = 12

3 × 6 = 18

6 × 3 = 18

1 × 7 = 7

7 × 1 = 7

3 × 5 = 15

5 × 3 = 15

9 × 2 = 18

2 × 9 = 18

D MULTIPLICATION (05) POST-TEST SKILL 7

[illegible]	
[✓ 5]	[✓ 100%]
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Ring the answer.

How many factors are there in the problem 6 × 1 = 6?

one [✓ two] three four

In the problem 3 × 4 = 12, which number or numbers are products?

only 3 both 3 and 4 3, 4, and 12 [✓ only 12]

In the problem 3 × 4 = 12, which number or numbers are factors?

only 3 [✓ both 3 and 4] 3, 4, and 12 only 12

In the problem 4 × 5 = 20, what is the 20 called?

factor sum quotient [✓ product]

In the problem 2 × 5 = 10, what is the 5 called?

[✓ factor] sum quotient product

D MULTIPLICATION (05) POST-TEST

SKILL 8

[illegible]	
5	100%
NO. OF PTS.	%
4	80
3	60
2	40
1	20

Solve each problem. Label the answer.

Jane had 4 boxes with 5 pencils in each box. How many pencils did Jane have in all?

20 pencils

In basketball, Smith scored 7 points in each of 3 games. How many points did Smith score in all?

21 points

Dorothy had 2 fishbowls. Each fishbowl contained 9 fish. How many fish did Dorothy have in all?

18 fish

Roberto filled 6 bags with apples. Each bag held 5 apples. How many apples were in the 6 bags?

30 apples

How many marbles would you have if you had 3 boxes with 9 marbles in each box?

27 marbles

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MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

Mastery J.J. 3.10

STUDENT NAME Susan Markham
STUDENT NUMBER
SCHOOL STAMP
GRADE 4 ROOM 102 UNIT D-Multiplication

UNIT DATES	
UNIT BEGAN	3-2
UNIT ENDED	3-10
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-2	J.J.	Pre-test									
3-3	J.J.	1			read stud. pg.						
			2	02	Eddie Clark	6	6				
			3	02	Bob Carter	8	8				
			4			6	6				
			5			5	5				
			8			6	6				
			11	03		6	6				
			13	03		18	18				
			16	C.E.T.				4/4	100	4/4	100
3-6	J.J.	3	17p	C.E.T.	2nd pt. only					5/7	71
3-7	J.J.	4			read stud. pg.						
			1			18	18				
			2			13	13				
			3			10	3				
			5			16	16				
			6	12		16	14				
			7			20	19				
			8	C.E.T.				4/4	100	2/2	100
3-8	J.J.	5	7p	C.E.T.				6/6	100	6/6	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
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10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	4	2	50	4	100				
2	5	5	100	5	100				
3	8	8	100	8	100				
④	20	3	15	18	90				
⑤	5	0	0	5	100				
6	5	5	100	4	80				
⑦	5	0	0	5	100				
8	5	5	100	5	100				
DATES		3-2		3-10					

IPI MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Susan Markham STUDENT NUMBER ________ UNIT D-Mult.

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
3-8	J.J.	6	13	C.E.T.	(2nd pt. only)					4/6	67
3-9	J.J.	7									
			1	02		15	15				
			2	02		21	10				
			3			9	5				
			7	03		4	4				
			5	C.E.T.				12/12	100	2/2	100
3-10	J.J.	Post-test									

In order to close out Susan's work in this unit you must now go again to the Student Profile Sheet and write an "M" and the date in the D-Mult box on the following form.

Check your work on the next page.

ipi MATHEMATICS

STUDENT PROFILE

Name Susan Markham Grade 4 Room 201

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	X	M 9-25	M 11-17	M 1-27				
PLACE VALUE (02)	▨	M 10-30	M 12-1	M 2-7				
ADDITION (03)	▨	▨	M 12-20	M 2-15				
SUBTRACTION (04)	▨	▨	M 1-18	M 3-2				
ADDITION/ SUBTRACTION (34)	X	X	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨					
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	X					
FRACTIONS (08)	X	X	X					
MONEY (09)	▨	X	X				▨	▨
TIME (10)	▨	X	X					
SYSTEMS OF MEASUREMENT (11)	▨	X	X					▨
GEOMETRY (12)	▨	X	X					
SPECIAL TOPICS (13)	▨	▨						

ipi STUDENT PROFILE

MATHEMATICS

Name Susan Markham
Grade 4
Room 201

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒	M / 9-25	M / 11-17	M / 1-27				
PLACE VALUE (02)	▨	M / 10-30	M / 12-1	M / 2-7				
ADDITION (03)	▨	▨	M / 12-20	M / 2-15				
SUBTRACTION (04)	▨	▨	M / 1-18	M / 3-2				
ADDITION/ SUBTRACTION (34)	☒	☒	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨	M / 3-10				
DIVISION (06)	▨	▨	▨					
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	☒					
FRACTIONS (08)	☒	☒	☒					
MONEY (09)	▨	☒	☒				▨	▨
TIME (10)	▨	☒	☒					
SYSTEMS OF MEASUREMENT (11)	▨	☒	☒					▨
GEOMETRY (12)	▨	☒	☒					
SPECIAL TOPICS (13)	▨	▨						

ED0 305 84

TEACHING IN IPI MATHEMATICS

(A Program of Teacher Preparation)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Volume 6

Developing a Prescription

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street
Philadelphia, Pennsylvania

SP002419

RESEARCH FOR BETTER SCHOOLS, INC.

James W. Becker, Executive Director

Robert G. Scanlon, Director
Individualizing Learning Program

Mary V. Brown, Coordinator
IPI Training

Major Contributors:

Carolyn J. Carter
Research Assistant

James S. Johnson
Research Assistant

Claire A. Moshy
Research Associate

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DEVELOPING A PRESCRIPTION

CASE STUDY TYPE 3

PHYLLIS CAREY
D-GEOM

Case Study III

This case study focuses on Phyllis Carey, a third grade student working in D-Geometry. This study includes a Mathematics Prescription Sheet with all the information filled in and an audio disc. Use the disc labeled B-1: STEPS IN PLANNING AND CONDUCTING A PROGRAM OF INDIVIDUALLY PRESCRIBED INSTRUCTION for a discussion of the prescription sheet. Be ready to jot down any comments or questions that occur to you as you listen to the disc. Use these notations in discussions with the trainer and with the other participants.

This particular case study serves as a review of all previously presented material.

ipi MATHEMATICS PRESCRIPTION SHEET

Mastery 11-10 CJC

STUDENT NAME Phyllis Carey STUDENT NUMBER 1836

SCHOOL STAMP

GRADE 3 ROOM 12 UNIT D- Geometry

UNIT DATES	
UNIT BEGAN	10-31
UNIT ENDED	11-10
DAYS WORKED	

	SKILL BOOKLETS								CURRICULUM TEST			
									PART 1		PART 2	
	DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
#	10-31	C.J.C.	Pre-test									
1	11-1	E.P.	1	1	02	DAVID S.	2	2				
2				3	02	DAVID S.	9	7				
3				17	01		11	11				
4	11-2	E.P.	1	16	C.E.T.				5/5	100	0/2	0
5	11-3	E.P.	2	2	03		7	7				
6				3	08	"Shapes"	13	13				
7				5			9	5				
8	11-6	E.P.	2	13	02	CHARLES J.	7	7				
9				8			6	5				
10				10			12	12				
11	11-7	E.P.	2	11	C.E.T.				10/10	100	5/5	100
12	11-7	E.P.	3	22	C.E.T.				5/5	100		
13	11-8	E.P.	Post-Test									
14	11-9	E.P.	3	5	01		6	6				
15				7			10	8				
16				8			15	15				
17				9			10	10				
18	11-10	E.P.	3	25	C.E.T.				5/5	100		
19	11-10	C.J.C.			01	Final Review						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
①	3	2	67	3	100				
②	2	1	50	2	100				
③	5	4	80	4	80	→	T.J.		
DATES		10-31		11-8					

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DEVELOPING A PRESCRIPTION

CASE STUDY - TYPE 4

RALPH STONEY
F-DIVISION

CASE STUDY IV

The material presented in this case study concerns Ralph Stoney, a sixth grade student.

You will be playing the role of the teacher in analyzing and prescribing work for Ralph.

The use of Instructional Techniques appears throughout this sample. As you have probably noticed, the codes for these are listed in the lower left hand corner of the Prescription Sheet. The IPI teacher assigns a specific code along with the STS materials when she feels that particular mode of instruction will best keep the child in his work. As you prescribe, integrate your prescription of STS materials with some of the Instructional Techniques listed. They should reflect the learning characteristics of the child.

For a more detailed explanation of the Instructional Techniques refer to the booklet entitled, IPI Mathematics: The Use Of Instructional Techniques.

This is Ralph Stoney's Math Placement Profile. He was initially administered level F battery of Placement tests. The other levels were given when necessary.

Examine the test scores and fill in the "Placed at Level" column. When you have completed this you can compare your answers with Page 4.

ipi MATHEMATICS

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Ralph Stoney STUDENT NUMBER 4444

SCHOOL STAMP ________ GRADE 6 ROOM 230

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.					10	10		
		SCORE					9	7		
		%					90	70		
PLACE VALUE (02)		MAX. PTS.					10	10		
		SCORE					8	6		
		%					80	60		
ADDITION (03)		MAX. PTS.	▨				10	10		
		SCORE	▨				10	6		
		%	▨				100	60		
SUBTRACTION (04)		MAX. PTS.	▨				10	10		
		SCORE	▨				10	5		
		%	▨				100	50		
ADDITION/ SUBTRACTION (34)		MAX. PTS.		▨	▨	▨	▨	▨		
		SCORE		▨	▨	▨	▨	▨		
		%		▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨			10	10			
		SCORE	▨			6	2			
		%	▨			60	20			
DIVISION (06)		MAX. PTS.	▨			10	5			
		SCORE	▨			4	1			
		%	▨			40	20			
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨		10	10	10			
		SCORE	▨		6	2	2			
		%	▨		60	20	20			
FRACTIONS (08)		MAX. PTS.					10			
		SCORE					5			
		%					50			
MONEY (09)		MAX. PTS.					10	▨	▨	
		SCORE					7	▨	▨	
		%					70	▨	▨	
TIME (10)		MAX. PTS.					10			
		SCORE					6			
		%					60			
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.					10	10	▨	
		SCORE					8	4	▨	
		%					80	40	▨	
GEOMETRY (12)		MAX. PTS.					10	10		
		SCORE					8	5		
		%					80	50		

Based upon prototype originated by the Learning Research and Development Center. As Field tested by Research for Better Schools, Inc.

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APPLETON-CENTURY-CROFTS
DIVISION OF MEREDITH CORPORATION
440 Park Avenue South, New York, N.Y. 10016

MATHEMATICS PLACEMENT PROFILE

STUDENT NAME Ralph Stoney

STUDENT NUMBER 4444

SCHOOL STAMP ______ GRADE 6 ROOM 230

MATHEMATICS AREA	DATE OF TEST	PLACEMENT LEVELS B–H								PLACED AT LEVEL
			B	C	D	E	F	G	H	
NUMERATION (01)		MAX. PTS.					10	10		G
		SCORE					9	7		
		%					90	70		
PLACE VALUE (02)		MAX. PTS.					10	10		G
		SCORE					8	6		
		%					80	60		
ADDITION (03)		MAX. PTS.	▨				10	10		G
		SCORE	▨				10	6		
		%	▨				100	60		
SUBTRACTION (04)		MAX. PTS.	▨				10	10		G
		SCORE	▨				10	5		
		%	▨				100	50		
ADDITION/ SUBTRACTION (34)		MAX. PTS.		▨	▨	▨	▨	▨		H
		SCORE		▨	▨	▨	▨	▨		
		%		▨	▨	▨	▨	▨		
MULTIPLICATION (05)		MAX. PTS.	▨			10	10			E
		SCORE	▨			6	2			
		%	▨			60	20			
DIVISION (06)		MAX. PTS.	▨			10	5			E
		SCORE	▨			4	1			
		%	▨			40	20			
MULTIPLICATION/ DIVISION (56)		MAX. PTS.	▨	▨	▨	▨	▨	▨		H
		SCORE	▨	▨	▨	▨	▨	▨		
		%	▨	▨	▨	▨	▨	▨		
COMBINATION OF PROCESSES (07)		MAX. PTS.	▨		10	10	10			D
		SCORE	▨		6	2	2			
		%	▨		60	20	20			
FRACTIONS (08)		MAX. PTS.					10			F
		SCORE					5			
		%					50			
MONEY (09)		MAX. PTS.					10	▨	▨	F
		SCORE					7	▨	▨	
		%					70	▨	▨	
TIME (10)		MAX. PTS.					10			F
		SCORE					6			
		%					60			
SYSTEMS OF MEASUREMENT (11)		MAX. PTS.					10	10	▨	G
		SCORE					8	4	▨	
		%					80	40	▨	
GEOMETRY (12)		MAX. PTS.					10	10		G
		SCORE					8	5		
		%					80	50		

Based upon prototype originated by the Learning Research and Development Center. As Field tested by Research for Better Schools, Inc.

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APPLETON-CENTURY-CROFT
DIVISION OF MEREDITH CORPORATIO
440 Park Avenue South, New York, N.Y. 100

Ralph Stoneys' following Math Profile shows which level he should correctly be placed in.

On Page 7 the student profile sheet shows at a glance the learning needs of each student. The "X'd" in units indicate mastery determined by placement tests. The information was transferred from his placement profile.

These dates are the exact days that Ralph mastered a post-test, therefore completing that unit.

Ralph has previously worked through units in the following order: D-Comb. of Proc., E-Multiplication, E-Division, E-Comb. of Proc., F-Multiplication. Examine the profile sheet and select the next unit to be assigned.

ipi STUDENT PROFILE

MATHEMATICS

Name Ralph Stoney Grade 6 Room 230

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒	☒	☒	☒	☒	☒		
PLACE VALUE (02)	▨	☒	☒	☒	☒	☒		
ADDITION (03)	▨	▨	☒	☒	☒	☒		
SUBTRACTION (04)	▨	▨	☒	☒	☒	☒		
ADDITION/ SUBTRACTION (34)			▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨	☒	9-22 / M	9-30 / M		
DIVISION (06)	▨	▨	▨	☒	9-25 / M			
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	☒	9-19 / M	9-28 / M			
FRACTIONS (08)	☒	☒	☒	☒	☒			
MONEY (09)	▨	☒	☒	☒	☒		▨	▨
TIME (10)	▨	☒	☒	☒	☒			
SYSTEMS OF MEASUREMENT (11)	▨	☒	☒	☒	☒	☒		▨
GEOMETRY (12)	▨	☒	☒	☒	☒	☒		
SPECIAL TOPICS (13)	▨	▨						

Here is a blank Prescription Sheet made out for Ralph.

You may tear this out to make it easier to use.

Write all your prescriptions for Ralph's work in F-Division on this sheet. You will notice that if you do not have enough room on side one that the back may be used also.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES										
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
DATES									

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IPI
MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME ______________________ STUDENT NUMBER ________________ UNIT ______________

SKILL BOOKLETS								CURRICULUM TEST			
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	PART 1		PART 2	
								NO. OF POINTS	%	NO. OF POINTS	%

Ralph is to begin working in F-Division. The teacher assigns the F-Division Pre-test which Ralph completes and gives to the Aide for scoring. The following is a copy of Ralph's Pre-test that has been scored by the Aide. Examine Ralph's F-Division Pre-test.

You will see that the aide has recorded the Pre-test scores on the Prescription Sheet.

In the role of the teacher, identify the skills that require a prescription, (under 85%) and circle these skill numbers on the Prescription Sheet.

You may check your work with the Prescription Sheet on Page 19.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney
STUDENT NUMBER
SCHOOL STAMP
GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
2	4	3	75						
3	2	0	0						
4	4	2	50						
5	5	5	100						
6	3	0	0						
7	4	4	100						
8	3	2	67						
DATES		9-30							

ipi MATHEMATICS PRE-TEST

Name Ralph Stoney
Class 6
Date 9-30
Number 4444

LEVEL F, DIVISION (06)

SKILL 1

TL. PTS.	
[✓ 4]	[✓ 100%]
NO. OF PTS.	
3	75
2	50
1	25

Division: Directs student to divide a two- (or more) digit dividend by a two- or three-digit divisor; to write remainders as fractions; to divide decimal numbers to hundreds by a one- or two-digit number; to solve two-step word problems.

Divide by using repeated subtraction.

$\begin{array}{r}44\\-11\\\hline 33\end{array}$ $\begin{array}{r}33\\-11\\\hline 22\end{array}$ $\begin{array}{r}22\\-11\\\hline 11\end{array}$ $\begin{array}{r}11\\-11\\\hline 0\end{array}$

44 ÷ 11 = 4

$\begin{array}{r}86\\-21\\\hline 65\end{array}$ $\begin{array}{r}65\\-21\\\hline 44\end{array}$ $\begin{array}{r}44\\-21\\\hline 23\end{array}$ $\begin{array}{r}23\\-21\\\hline 2\end{array}$

86 ÷ 21 = 4 R2

$\begin{array}{r}56\\-15\\\hline 41\end{array}$ $\begin{array}{r}41\\-15\\\hline 26\end{array}$ $\begin{array}{r}26\\-15\\\hline 11\end{array}$

56 ÷ 15 = 3 R 11

$\begin{array}{r}70\\-34\\\hline 36\end{array}$ $\begin{array}{r}36\\-34\\\hline 2\end{array}$

70 ÷ 34 = 2 R2

F DIVISION (06) PRE-TEST

SKILL 2

TL. PTS.	
4	100%
NO. OF PTS.	
0	75
	50
	25

Divide.

$\begin{array}{r} 4 \\ 32\overline{)128} \end{array}$ $\begin{array}{r} 41 \\ 52\overline{)2,132} \end{array}$

$\begin{array}{r} 201 \\ 174\overline{)3,654} \end{array}$ X $\begin{array}{r} 1,242 \\ 26\overline{)32,292} \end{array}$

SKILL 3

TL. PTS.	
2	100%
NO. OF PTS.	
1	50
0	0

Divide. Round off the numbers and estimate to check your answers.

Check Check

$14\overline{)986}$ $\overline{)}$ X $53\overline{)704}$ $\overline{)}$ X

SKILL 4

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
[✓ 2]	[✓ 50]
1	25

F DIVISION (06) PRE-TEST

Divide. Write the remainder using R.

$86\overline{)417}$ 4 R 73

$66\overline{)4,406}$ 66R50 X

$105\overline{)4,321}$ 12R16 X

$212\overline{)8,368}$ 39R100

F DIVISION (06) PRE-TEST SKILL 5

5	[✓ 100%]
NO. OF PTS.	%
4	60
3	40
2	[illegible]
1	20

Ring all of the expressions in each row which are equal to the boxed fraction at the beginning of the row.

$\frac{3}{4}$	[✓ $4\overline{)3}$] $4 \div 3$ [✓ $3 \div 4$] $3\overline{)4}$ 3^4
$\frac{24}{6}$	$24\overline{)6}$ 24×6 [✓ 4] [✓ $6\overline{)24}$] $24 - 6$
$\frac{7}{7}$	[✓ $7\overline{)7}$] [✓ 1] 7 [✓ $7 \div 7$] $\frac{7}{6}$
$\frac{25}{3}$	$8\frac{1}{8}$ [✓ $25 \div 3$] [✓ $8\frac{1}{3}$] $3\frac{1}{8}$ $3 \div 25$
$\frac{48}{5}$	$48\overline{)5}$ $5\frac{1}{9}$ $9\frac{1}{5}$ [✓ $5\overline{)48}$] [✓ $9\frac{3}{5}$]

F DIVISION (06) PRE-TEST

SKILL 6

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

00

Divide. Write the remainder as a fraction.

$\begin{array}{r}10\\8\overline{)85}\end{array}$ r 5 X

$\begin{array}{r}33\\4\overline{)135}\end{array}$ r 3 X

$\begin{array}{r}34\\9\overline{)308}\end{array}$ r 2 X

SKILL 7

TL. PTS.	
4	100%
NO. OF PTS.	
3	75
2	50
1	25

Divide.

$\begin{array}{r}.061\\6\overline{).366}\end{array}$

$\begin{array}{r}3.07\\48\overline{)147.36}\end{array}$

$\begin{array}{r}.468\\4\overline{)1.872}\end{array}$

$\begin{array}{r}.04\\23\overline{).92}\end{array}$

F DIVISION (06) PRE-TEST SKILL 8

TL. PTS.	
3	100%
NO OF PTS	
2	67
1	33

Solve. Label each answer.

Dottie and Jim had a lemonade stand. One day they made $1.30 profit after paying $.35 for frozen lemonade mix. If they sold 33 glasses of lemonade that day, how much did they charge for each glass?

$.05 (or 5¢)

Jean mixed 8 cups of orange juice and 4 cups of grapefruit juice together to make punch for her party. She poured all the punch into 9 tall glasses. How much of the mixture did she use in each glass?

1 r 3 cups X

The teacher had 79 pieces of candy. She gave 5 pieces to the janitor. Then she gave each of her 18 pupils as many pieces of candy as she could, being careful to see that each child had the same amount of candy. How many pieces of candy were left over?

2 pieces of candy

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
DATES		9-30							

Before you write the initial prescription look at Ralph's learning characteristics and let them influence the type of prescriptions you write for him.

Analysis of Student Behavior

A. Describe the behaviors which facilitate Ralph's learning:

Ralph is anxious to learn new material. He accepts the use of diagnostic tests; this facilitates his attitude and approach to new learning. He works well independently.

Ralph works well with his classmates. He is a leader and also is open to suggestions and help from his peers.

B. Describe the behaviors which hamper Ralph's learning:

Ralph is often careless in his work; he gets exasperated in group settings because he usually learns at a faster rate than his peers.

C. Describe the new behaviors which Ralph should develop as he works with the IPI materials:

Ralph should learn to write his own prescriptions.

The first skill in which Ralph is deficient is Skill #2.

The following Standard Teaching Sequence booklet is for Skill #2. Examine the booklet to determine which pages will be assigned to overcome his deficiency.

Refer to the Pre-test, and analyze Ralph's learning needs. Select the pages you feel will instruct him and assign those pages on the Prescription Sheet.

After you have written your prescription for Skill #2, compare your assignments with the prescription on Page 40.

ipi
MATHEMATICS

Name ______________________ Date ______________

Class ______________________ Number ______________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

IPI Project Staff

LEARNING RESEARCH AND DEVELOPMENT CENTER

University of Pittsburgh

- *distributed by*

RESEARCH FOR BETTER SCHOOLS, INC.

- *written and revised by*

the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL F, DIVISION (06), SKILL 2

23

TO THE STUDENT

Use the ladder method to find the quotient. (Answers to division problems are called quotients.)

$$625\overline{)\,53750}$$

Use the division algorithm to find the quotient.

$$484\overline{)\,44528}$$

Answers

$$\begin{array}{r|r} \multicolumn{1}{r}{86} & \\ 625\overline{)\,53750} & \\ -\underline{50000} & 80 \\ \hline 3750 & \\ -\underline{3750} & 6 \\ \hline 0 & 86 \end{array}$$

$$\begin{array}{r} 92 \\ 484\overline{)\,44528} \\ -\underline{4356} \\ 968 \\ -\underline{968} \\ 0 \end{array}$$

Check yourself. None of the quotients in this booklet should have a remainder.

Review the ladder method.

```
        36
20 ) 720 |
    -600 | 30
     120 |
    -120 |  6
       0 | 36
```

How many totals of 20 in 720?

Ask yourself, 20 × ? = 720. Estimate 30 (Start with a multiple of 10.) 30 × 20 = 600.

Subtract 600 from 720 to see if there are any more totals of 20 left. You will find there are 6 totals of 20 left (6 × 20 = 120).

Add the factors (30 + 6 on right side of ladder).

From the division above, we see that there are exactly ____ totals of 20 in 720.

Find the quotients.

27) 351

16) 192

22) 418

TOTAL POINTS	NUMBER CORRECT
5	

LEVEL	UNIT	SKILL	PAGE
F	06	2	1

Use the ladder method to find the quotients.

5
36) 180

27) 162

28) 168

15) 600

20) 720

14) 784

23) 322

34) 850

43) 688

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
F	06	2	2

Here is another form of division. It is called the division algorithm.

1
23) 345
−23
11

Look at the dividend 345.

Ask yourself: "Does 23 divide into the first digit, 3?" No.

"Does 23 divide into 34?" Yes. How many times? Once.

15
23) 345
−23
115
−115
0

Write the 1 above the 4 of the dividend.

Multiply 1 × 23 and subtract the product (23) from 34.

34
− 23
11

Bring down the next digit, 5. Divide 23 into 115.

23 × 5 = 115

Your correct answer is therefore 15, and it is your quotient.

Use the division algorithm.

12
14) 168
−14
28
−28
0

16) 336

23) 552

TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
F	06	2	3

Use the division algorithm to find the quotient. Fill in the blanks.

$$\begin{array}{r} 27 \\ 23\overline{)621} \end{array}$$

Look at the dividend which is ____.

Ask yourself: "Does 23 divide into the first digit 6? _____

Does 23 divide into 62?" _____

How many times? ______

Write the 2 above the 2 of 62 in the dividend.

Multiply 2 × 23 and subtract this product from 62.

$$\begin{array}{r} 62 \\ -46 \\ \hline \end{array}$$

Bring the next digit of the dividend down (it is 1)

Divide ____ into 161. 23 × ____ = 161

Use the division algorithm to find the quotient.

$24\overline{)744}$ $32\overline{)544}$

$48\overline{)624}$ $36\overline{)864}$

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
F	06	2	4

Use the division algorithm to find the quotients.

7
52) 3692
364
52
52
0

47) 2773

68) 5576

64) 2112

68) 5032

89) 8366

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
F	06	2	5

Use the division algorithm to find the quotients.

$$\begin{array}{r} 5 \\ 53\,\overline{)\,28832} \end{array}$$

$$63\,\overline{)\,44541}$$

$$72\,\overline{)\,67392}$$

$$85\,\overline{)\,75225}$$

For extra practice, do Page 11.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	2	6

Use the ladder method to find the quotients.

496) 50096

835) 53440

602) 140868

476) 244188

For extra practice, do Page 12.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	2	7

Use the division algorithm to find the quotients.

$$326\overset{4}{\overline{)14018}}$$

$$564\overline{)31020}$$

300 divides into 1400
about 4 times.

300 divides into 900
about ____ times.

$$532\overline{)25004}$$

$$769\overline{)52292}$$

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
F	06	2	8

Use the division algorithm to find the quotients.

$46\overline{)\,4278}$

$14\overline{)\,406}$

$225\overline{)\,19800}$

$53\overline{)\,1007}$

$81\overline{)\,32481}$

$26\overline{)\,2418}$

$306\overline{)\,13770}$

$46\overline{)\,1978}$

$787\overline{)\,26758}$

TOTAL POINTS	NUMBER CORRECT
9	

LEVEL	UNIT	SKILL	PAGE
F	06	2	9

CET I

Divide. Use the division algorithm.

$16\overline{)768}$ $17\overline{)1479}$

$372\overline{)15,996}$ $67\overline{)2278}$

TL. PTS.	
4	100%
NO. OF PTS.	
3	75
2	50
1	25

Solve each division problem. Then round each divisor to the nearest ten, round each dividend to the nearest hundred, and divide to check your answer by estimating.

$42\overline{)588}$ $22\overline{)1606}$

TL. PTS.	
4	100%
NO. OF PTS.	
3	75
2	50
1	25

LEVEL	UNIT	SKILL	PAGE
F	06	2	10

Use the division algorithm to find the quotients.

Study this example.

675
92) 62100
552
690
644
460
460
0

43) 35862

88) 35992

34) 24684

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	2	11

Use the division algorithm to find the quotients.

$372 \overline{)\,224688}$

$519 \overline{)\,221094}$

$821 \overline{)\,466328}$

$635 \overline{)\,457835}$

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	2	12

CET II

Divide. Use the division algorithm.

$19\,\overline{)\,988}$

$28\,\overline{)\,2100}$

$283\,\overline{)\,10188}$

$34\,\overline{)\,1394}$

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Solve each division problem. Then round each divisor to the nearest ten, round each dividend to the nearest hundred, and divide to check your answer by estimating.

$28\,\overline{)\,924}$

Estimate

$41\,\overline{)\,1762}$

Estimate

TL. PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

LEVEL F, DIVISION, SKILL 2

OBJECTIVE: Divides a two-or-more digit dividend by a two-or three-digit divisor. No remainder.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Uses ladder method to find quotients for 2-digit divisor and 3-digit dividend. Explanation given.	
2.	Uses ladder method to find quotients for 2-digit divisor and 3-digit dividend.	
3.	Uses division algorithm to find quotients for 2-digit divisor and 3-digit dividend. Explanation given.	
4.	Uses division algorithm to find quotients for 2-digit divisor and 3-digit dividend.	
5.	Uses division algorithm to find 2-digit quotients for 2-digit divisors and 4-digit dividends.	
6.	Uses division algorithm to find 3-digit quotients for 2-digit divisors and 5-digit dividends.	11
7.	Uses ladder method to find 3-digit quotients for 3-digit divisors and 5 or 6-digit dividends.	12
8.	Uses division algorithm to find 2-digit quotients for 3-divisors and 5-digit dividends.	
9.	Uses either method for various size problems.	
10.	CET I. CET II.	13

Circle pages that are to be done.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									
10-1	C.J.C.	2	Read Stud. page								
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	50

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
	DATES	9-30							

P1 — 1968

Instructional Codes

In the fifth column from the left you see instructional techniques being used.

The bottom left hand corner gives you an idea of the types of settings and materials that should be used in conjunction with work pages from the Standard Teaching Sequence Booklet.

You can see that code, 02, was assigned with Page 8. This shows that the teacher wanted Ralph to complete this page in a Peer Tutor Situation.

From Ralph's learning charactersitics previously given, begin to use varied codes in your prescriptions when applicable.

This is the CET completed by Ralph and corrected by the Aide.

Analyze Ralph's work on both parts of this CET.

You can see that he mastered the material for Skill 2. However, he scored 50% on the part for Skill 3. He is therefore ready for a prescription in Skill 3.

CET I

Divide. Use the division algorithm.

48
16) 768
64
128
128

87
17) 1479
136
119
119

43
372) 15,996
14880
1116
1116

34
67) 2278
2010
268
268

TL. PTS.	
[✓ 4]	[✓ 100%]
NO. OF PTS.	
3	75
2	50
1	25

Solve each division problem. Then round each divisor to the nearest ten, round each dividend to the nearest hundred, and divide to check your answer by estimating.

14
42) 588
42
168
168

10
× 40
400
188
588

X

73
22) 1606
154
66
66

20
× 70
1400
154
1654

TL. PTS.	
4	100%
NO. OF PTS.	-
3	75
[✓ 2]	[✓ 50]
1	25

TOTAL POINTS	NUMBER CORRECT
6	6

LEVEL	UNIT	SKILL	PA..
F	06	2	10

Here is the STS Booklet for Skill #3. After analyzing Ralph's Pre-test work for Skill #3 and examining the material available write his prescription for Skill #3.

You can check your prescription with the one on Page 70.

ipi
MATHEMATICS

Name ____________________ Date ____________________

Class ____________________ Number ____________________

Standard Teaching Sequence

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INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL F, DIVISION (06), SKILL 3

TO THE STUDENT

Round off the divisor and dividend, and estimate the quotient.

$$37\overline{)\,1{,}691} \quad \rightarrow \quad \overline{)}$$

In this booklet you will learn how to solve this type of problem.

Answer

$$\begin{array}{r} 400 \\ 40\overline{)\,1600} \end{array}$$

Study the page and supply the correct numerals.

In order to estimate quotients, you must round off divisors and dividends.

$$\begin{array}{r} \text{quotient} \\ \text{divisor}\;\overline{)\,\text{dividend}} \end{array}$$

You round the divisor upward. If the divisor is less than 100, round to the next 10.

21 rounds off to 30
64 → 70
68 → 70

Round off the numbers upward to the next 10.

5 → 10
46 →
81 →
29 →
66 →
53 →
35 →
77 →
16 →
9 →
12 →
98 →

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
F	06	3	1

When rounding off divisors between 100 and 1,000, round upward to the next 100.

235 rounds off to 300

402 → 500

498 → 500

Round these numbers upward to the next 100.

641 → 700

211 →

103 →

562 →

493 →

842 →

961 →

755 →

321 →

684 →

196 →

579 →

TOTAL POINTS	NUMBER CORRECT
12	

In $461\overline{)\,1{,}243}$ you round off the divisor upward because if 500 will divide into 1,243, then certainly 461 will.

Practice rounding off these numbers upward.

46 → 50
243 → 300
72 →
464 →
93 →
276 →
31 →
706 →

556 →
385 →
52 →
860 →
350 →
28 →
423 →
902 →

For extra practice, do Page 17.

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
F	06	3	3

Study the page and supply the correct numerals. You have learned that in order to estimate quotients you round off the divisor upward. The next thing to do is to round off the dividend downward.

divisor ↓ **upward**	**dividend** ↓ **downward**

If the dividend is less than 100, round off downward to the next 10.

43 rounds off to 40

89 → 80

18 → 10

Round off downward to the next 10.

57 → 50

19 →

81 →

95 →

27 →

23 →

42 →

76 →

66 →

38 →

88 →

32 →

25 →

12 →

TOTAL POINTS	NUMBER CORRECT
14	

LEVEL	UNIT	SKILL	PAGE
F	06	3	4

When rounding off dividends between 100 and 1,000, round downward to the next 100.

295 rounds off to 200

201 → 200

861 → 800

129 → 100

Round off downward to the next 100.

287 → 200

423 →

693 →

754 →

836 →

509 →

911 →

996 →

882 →

837 →

612 →

781 →

606 →

942 →

228 →

394 →

TOTAL POINTS	NUMBER CORRECT
16	

LEVEL	UNIT	SKILL	PAGE
F	06	3	5

When rounding off dividends between 1000 and 2000, round downward to next 100.

1,764 → 1,700

1,399 → 1,300

1,906 → 1,900

Round off downward to the next 100.

1,243 → 1,200

1,705 →

1,798 →

1,363 →

1,421 →

1,490 →

1,537 →

1,851 →

1,822 →

1,628 →

1,828 →

1,980 →

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
F	06	3	6

In $461\overline{)\,1{,}246}$ you round off the dividend downward because if 461 will divide into 1,246, it will certainly divide into 1,200.

Practice rounding off downward these numbers which could be used as dividends.

89 → 80

317 → 300

1,263 → 1200

465 →

1,382 →

15 →

833 →

1,460 →

77 →

309 →

1,540 →

53 →

744 →

1,926 →

14 →

131 →

1,887 →

64 →

921 →

1,738 →

For extra practice, do Page 18.

TOTAL POINTS	NUMBER CORRECT
20	

LEVEL	UNIT	SKILL	PAGE
F	06	3	7

Circle the correct rounded off divisors or dividends shown.

$n\overline{)\,231}$

300
[✓ 200]
230

$76\overline{)\,n}$

[✓ 80]
70
75

$n\overline{)\,407}$

450
400
500

$431\overline{)\,n}$

400
500
430

$n\overline{)\,861}$

800
860
900

$85\overline{)\,n}$

80
100
90

$62\overline{)\,n}$

60
70
65

$n\overline{)\,1{,}246}$

1,240
1,200
1,300

$n\overline{)\,656}$

600
650
700

$n\overline{)\,436}$

400
430
500

$292\overline{)\,n}$

290
200
300

$13\overline{)\,n}$

10
20
15

For extra practice, do Page 19.

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
F	06	3	8

Look at this division problem.

$$\begin{array}{r} 45\ \text{R}12 \\ 19\overline{)867} \\ -76 \\ \hline 107 \\ -95 \\ \hline 12 \end{array}$$

It is fairly long and tedious. Sometimes we want only an approximate answer and we need it quickly. In such a case we estimate.

$$\begin{tikzcd} 19\,) \arrow[d] & \overline{867} \arrow[d, bend left] \\ 20\,) & \overline{800} \end{tikzcd}$$

The divisor rounds off u______.

The dividend rounds off d______.

The estimated quotient is 40.

Round off the divisors and dividends and estimate the quotients.

$17\overline{)65}$ $27\overline{)67}$ $18\overline{)81}$ $25\overline{)93}$

rounds to

$\begin{array}{r} 3 \\ 20\overline{)60} \end{array}$ $\overline{)\quad}$ $\overline{)\quad}$ $\overline{)\quad}$

TOTAL POINTS	NUMBER CORRECT
7	

LEVEL	UNIT	SKILL	PAGE
F	06	3	9

Round off divisors and dividends and estimate quotients.

Here are two examples.

$37\overline{)893}$ → $40\overset{20}{\overline{)800}}$

$51\overline{)648}$ → $\overline{)}$

$31\overline{)462}$ → $\overline{)}$

$46\overline{)676}$ → $\overline{)}$

$23\overline{)921}$ → $\overline{)}$

$18\overline{)285}$ → $\overline{)}$

$19\overline{)731}$ → $20\overset{35}{\overline{)700}}$

$32\overline{)484}$ → $\overline{)}$

$32\overline{)861}$ → $\overline{)}$

$13\overline{)528}$ → $\overline{)}$

$18\overline{)535}$ → $\overline{)}$

$21\overline{)275}$ → $\overline{)}$

TOTAL POINTS	NUMBER CORRECT
12	

LEVEL	UNIT	SKILL	PAGE
F	06	3	10

Round off divisors and dividends and estimate quotients.

$121\overline{)435}$ → $200\overline{)\overset{2}{400}}$

$255\overline{)391}$ →

$361\overline{)828}$ →

$175\overline{)631}$ →

$105\overline{)823}$ →

$225\overline{)950}$ →

$321\overline{)863}$ →

$136\overline{)429}$ →

$206\overline{)949}$ →

$542\overline{)688}$ →

For extra practice, do Page 20.

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
F	06	3	11

Round off divisors and dividends and estimate quotients.

$36\overline{)\,1,265}$ → $40\overline{)\,1,200}^{\,30}$

$139\overline{)\,1,264}$ → $200\overline{)\,1,200}^{\,6}$

$76\overline{)\,1,649}$ →

$143\overline{)\,1,485}$ →

$19\overline{)\,1,020}$ →

$323\overline{)\,1,606}$ →

$29\overline{)\,1,573}$ →

$271\overline{)\,1,545}$ →

$42\overline{)\,1,523}$ →

$207\overline{)\,1,838}$ →

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
F	06	3	12

Look at this problem.

$$36\overline{)721} \rightarrow \begin{array}{r} 17\,\frac{20}{40} = 17\frac{1}{2} \\ 40\overline{)700} \\ \underline{40} \\ 300 \\ \underline{280} \\ 20 \end{array}$$

There is a remainder of 20. One way to handle it is to put the remainder over the divisor $(\frac{20}{40})$ and reduce it $(\frac{1}{2})$. This is the fractional form of the remainder.

Estimate the quotients and write the remainders in fractional form.

$32\overline{)346}$ $35\overline{)966}$ $53\overline{)525}$

$40\overline{)300}$

For extra practice, do Page 21.

TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
F	06	3	13

Round off the divisors and dividends and estimate quotients. Where there are remainders, write them in fractional form.

$138\overline{)1{,}544}$

$76\overline{)835}$

$34\overline{)1{,}507}$

$245\overline{)1{,}967}$

$58\overline{)1{,}242}$

$41\overline{)1{,}076}$

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
F	06	3	14

Estimate the answers.

How many 12¢ ball point pens can you buy for $3.25?

Problem

$12\overline{)\,325}$

Estimate

$20\overline{)\,300}$

About ____ ball point pens

How many 29¢ packages of candy can you buy for $7.50?

Problem

Estimate

About ____ packages of candy

How many 15¢ party favors can you buy for $12.60?

Problem

Estimate

About ____ party favors

How many 54¢ notebooks can you buy for $17.39?

Problem

Estimate

About ____ notebooks

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	3	15

CET I

Estimate and then divide to find the exact answer.

TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

estimate

$58\overline{)\,1{,}508}$

estimate

$22\overline{)\,1{,}672}$

estimate

$47\overline{)\,1{,}175}$

estimate

$54\overline{)\,1{,}782}$

Divide. Write the remainders using an R.

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

$61\overline{)\,7{,}284}$ $326\overline{)\,8{,}493}$ $38\overline{)\,5{,}176}$

LEVEL	UNIT	SKILL	PAGE
F	06	3	16

You round off divisors upward.

Divisors less than 100 round up the next 10. 34 → 40

Divisors between 100 and 1,000 round up the next 100. 325 → 400

Round off upward.

41 → 50

207 → 300

95 →

476 →

29 →

312 →

77 →

549 →

82 →

760 →

59 →

838 →

27 →

645 →

61 →

707 →

43 →

964 →

TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
F	06	3	17

You round off dividends downward.

Dividends less than 100 round down to the next 10. 87 → 80

Dividends between 100 and 2000 round down to the next 100. 467 → 400

1467 → 1400.

Round off downward.

75 → 70

432 → 400

1,392 → 1300

81 →

640 →

1,207 →

65 →

291 →

1,168 →

83 →

702 →

1,729 →

35 →

699 →

1,804 →

17 →

232 →

1,925 →

TOTAL POINTS	NUMBER CORRECT
18	

LEVEL	UNIT	SKILL	PAGE
F	06	3	18

Round off the divisors to the nearest ten and the dividends to the nearest hundred.

$32\overline{)\,146}$

32 → 30

146 → 100

$75\overline{)\,307}$

75 → ____

307 → ______

$23\overline{)\,982}$

23 → ____

982 → ______

$48\overline{)\,1,342}$

48 → ____

1,342 → ________

$65\overline{)\,1,920}$

65 → ____

1,920 → ________

TOTAL POINTS	NUMBER CORRECT
10	

LEVEL	UNIT	SKILL	PAGE
F	06	3	19

Round off and estimate.

$65\overline{)732}$

$127\overline{)438}$

$37\overline{)829}$

$502\overline{)698}$

$31\overline{)628}$

$173\overline{)804}$

$25\overline{)912}$

$93\overline{)726}$

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
F	06	3	20

Estimate quotients and write remainders in fractional form.

$26\overline{)747}$

$$\begin{array}{r} 23\frac{1}{3} \\ 30\overline{)700} \\ -\underline{60} \\ 100 \\ -\underline{90} \\ 10 \end{array}$$

$\frac{10}{30} = \frac{1}{3}$

$22\overline{)549}$

$56\overline{)773}$

$75\overline{)731}$

$33\overline{)507}$

$63\overline{)649}$

$68\overline{)345}$

$37\overline{)786}$

TOTAL POINTS	NUMBER CORRECT
8	

LEVEL	UNIT	SKILL	PAGE
F	06	3	21

CET II

Estimate and then divide to find the exact answer.

TL. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

estimate

$16\overline{)864}$

estimate

$51\overline{)1{,}887}$

estimate

$305\overline{)1{,}830}$

estimate

$62\overline{)1{,}488}$

Divide. Write the remainder using an R.

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

$62\overline{)7{,}381}$

$432\overline{)6{,}832}$

$25\overline{)4{,}723}$

LEVEL	UNIT	SKILL	PAGE
F	06	3	22

LEVEL F, DIVISION, SKILL 3

OBJECTIVE: Rounds numbers in order to estimate quotients. Dividends to 2,000.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Rounds off upward divisors less than 100.	
2.	Rounds off upward divisors between 100 and 1,000.	
3.	Rounds off upward divisors to 1,000.	17
4.	Rounds off downward dividends less than 100.	
5.	Rounds off downward dividends between 100 and 1,000.	
6.	Rounds off downward dividends between 1,000 and 2,000.	
7.	Rounds off downward dividends to 2,000.	18
8.	Choses correct rounded off numerals for divisors and dividends.	19
9.	Rounds off 2-digit divisors and 2-digit dividends and estimates quotients; no remainders.	
10.	Estimates quotients for 2-digit divisors and 3-digit dividends; no remainders.	
11.	Estimates quotients for 3-digit divisors and 3-digit dividends; no remainders.	20
12.	Estimates quotients for 3-digit divisors and 4-digit dividends; no remainders.	
13.	Estimates quotients for 2-digit divisors and 3-digit dividends with remainders.	21
14.	Estimates quotients with remainders and without remainders.	
15.	Estimates quotients for word problems.	
16.	CET I.	
	CET II.	22

Circle pages that are to be done.

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney
STUDENT NUMBER 4444
SCHOOL STAMP ____________

UNIT DATES	
UNIT BEGAN	9/30
UNIT ENDED	
DAYS WORKED	

GRADE 6 ROOM 230 UNIT F-Division

SKILL BOOKLETS 2,3,4,6,8

DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	CURRICULUM TEST PART 1 NO. OF POINTS	PART 1 %	PART 2 NO. OF POINTS	PART 2 %
9-30	C.J.C.	Pre-test									
10-1	C.J.C.	2			read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	50
10-3	C.J.C.	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	12				
			7	01		20	14				
			12	03		10	0				
10-3	C.J.C.	3	16	C.E.T.				8/8	100	3/3	100

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES

SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
DATES		9-30							

P1 – 1968

Notice that codes for Instructional Techniques were again used. On Page 7, code 01 was assigned. Ralph's teacher found that while he was working this page it was necessary for teacher tutoring. For page 12, the teacher found that three other children were at the same place. Accorindgly, she formed a small group to teach this particular skill. These are unique examples which you as a trainee would not forsee. However, they do occur frequently and through the use of the Instructional Techniques certain learning problems can be eliminated.

This is the CET completed and corrected by Ralph.

Analyze Ralph's work on both parts of this CET.

As you can see from Ralph's CET scores he has mastered both sections of the CET. Therefore, he is automatically assigned the CET (Pad) for Skill 4.

CET I

Estimate and then divide to find the exact answer.

NO. PTS.	
8	100%
NO. OF PTS.	%
7	88
6	75
5	63
4	50
3	38
2	25
1	13

26
58) 1,508
116
348
348

estimate
25
60) 1500
120
300
300

76
22) 1,672
154
132
132

estimate
53
30) 1600
150
100

25
47) 1,175
94
235
235

estimate
22
50) 1,100
100
100
100

33
54) 1,782
162
162
162

estimate
28
60) 1,700
120
500
480

Divide. Write the remainders using an R.

NO. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

119 R5
61) 7,284
61
118
61
574
549
25

26R17
326) 8,493
652
1973
1956
17

136 R8
38) 5,176
38
137
114
236
228
8

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
F	06	3	16

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER 4444

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9/30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS 2, 3, 4, 6, 8

								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									
10-1	C.J.C.	2			read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	50
10-2	C.J.C.	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	12				
			7	01		20	14				
			12	03		10	0				
10-3	C.J.C.	3	16	C.E.T.				8/8	100	3/3	100
10-3	C.J.C.	4	10	C.E.T. (pad)							

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES

SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
	DATES	9-30							

P1 – 1968

This is the CET completed by Ralph and corrected by the Aide.

Analyze Ralph's work on both parts of this CET.

TL. PTS.	
[✓ 4]	100%
NO. OF PTS.	%
3	75
2	50
1	25

CET I

Divide using the division algorithm. Write the remainder using an R.

11 R 427
$621\overline{)7258}$

241 R22
$34\overline{)8216}$

10R41
$478\overline{)4821}$

146 R19
$63\overline{)9217}$

Circle the correct answer.

$\frac{25}{5}$ is equal to 25 3 [✓ 5] 25 × 5

27 ÷ 9 is equal to [✓ $\frac{27}{9}$] 27 × 9 4

42 ÷ 6 is equal to 8 $\frac{6}{42}$ [✓ $\frac{42}{6}$]

TL. PTS.	
[✓ 3]	100%
NO. OF PTS.	%
2	67
1	33

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LEVEL	UNIT	SKILL	PAGE
F	06	4	10

Again Ralph has mastered both sections of the CET. Therefore, he is prescribed the second half of the CET for Skill 5. This is because his Pre-test score was above mastery. The second half is assigned to serve as a second Pre-test for Skill 6 in which he was deficient.

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									
10-1	C.J.C.	2			read stud.pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	50
10-2	C.J.C.	3			read stud.pg.						
			1			12	12				
			3			16	16				
			4			14	12				
			7	01		20	14				
			12	03		10	0				
10-3	C.J.C.	3	15	C.E.T.				8/8	100	3/3	100
10-3	C.J.C.	4	10	C.E.T.	(pad)			4/4	100	3/3	100
10-4	C.J.C.	5	10	C.E.T.	(pad 2nd half)						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
	MATERIALS
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
DATES		9-30							

P1 – 1968

This is the CET for F-Division 5. Ralph mastered the material for Skill 6. Obviously he has learned skills of this unit by working in Skill 2. The work in the "small group" may also have helped. Even though his Pre-test indicated he needed a prescription, his scores on the 2nd half of the CET for Skill 5 showed differently.

Ralph is now ready to be assigned the CET for Skill 6 as a further check on his mastery of the skill.

CET I

Circle all of the correct answers in each row.

$\frac{32}{4}$ is equal to 8 $2\frac{1}{5}$ 32×4 $32 \div 4$

$\frac{65}{9}$ is equal to $6\frac{3}{9}$ $7\frac{2}{9}$ $65 \div 9$ 65×9

$\frac{40}{8}$ is equal to 4 5 $40 \div 8$ 8^4

$\frac{16}{3}$ is equal to 16^3 $3 \div 16$ $16 \div 3$ $5\frac{1}{3}$

$\frac{6}{7}$ is equal to $6 + 7$ $1\frac{1}{7}$ $6 \div 7$ 6^7

$\frac{48}{5}$ is equal to $9\frac{3}{5}$ $8\frac{1}{5}$ 5×48 $48 \div 5$

$\frac{18}{6}$ is equal to 3 $\frac{1}{3}$ $6 \div 18$ $18 \div 6$

TL. PTS.	
13	100%
NO. OF PTS.	%
12	92
11	85
10	77
9	69
8	62
7	54
6	46
5	38
4	31
3	23
2	15
1	8

Divide. Write the remainder as a fraction.

$\begin{array}{r} 4\frac{1}{7} \\ 7\overline{)\,29} \end{array}$ $\begin{array}{r} 4\frac{4}{11} \\ 11\overline{)\,48} \end{array}$ $\begin{array}{r} 5\frac{7}{9} \\ 9\overline{)\,52} \end{array}$

TL. PTS.	
3	100
NO. OF PTS.	
2	67
1	33

LEVEL	UNIT	SKILL	PAGE
F	06	5	10

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	CJC	Pre-Test									
10-1	CJC	2			read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	CJC	2	10	CET				4/4	100	2/4	50
10-2	CJC	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	14				
			7	01		20	14				
			12	03		10	0				
10-3	CJC	3	15	CET				[illegible]	100	3/3	100
10-3	CJC	4	10	CET	(pad)			4/4	100	3/3	100
10-4	CJC	5	10	CET	(pad 2nd half)					3/3	100
10-4	CJC	6	14	CET	(pad)						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
DATES		9-30							

13

P1 – 1968

Here is a copy of Ralph's work on the CET for Skill 6. He made a score of 100%. Therefore, he will not receive a prescription for the skill. His work on the second half for Skill 7 also showed mastery of that material. He is now ready to be assigned the complete CET for Skill 7. It will further show whether he still retains mastery of Skill 7 material and also serve as a short Pre-test for Skill 8.

CET I

Divide. Write the remainder as a fraction and reduce to lowest terms.

TL PTS	
6	100
PTS	
5	83
4	67
3	50
2	33
1	17

$$\begin{array}{r} 12\ \tfrac{1}{12} \\ 12\overline{)145} \\ \underline{12} \\ 25 \\ \underline{24} \\ 1 \end{array} \qquad \begin{array}{r} 12\ \tfrac{2}{3} \\ 3\overline{)38} \\ \underline{3} \\ 8 \\ \underline{6} \\ 2 \end{array}$$

$$\begin{array}{r} 3\ \tfrac{2}{9} \\ 9\overline{)29} \\ \underline{27} \\ 2 \end{array} \qquad \begin{array}{r} 13\ \tfrac{1}{4} \\ 4\overline{)53} \\ \underline{4} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

$$\begin{array}{r} 59\ \tfrac{3}{8} \\ 8\overline{)475} \\ \underline{40} \\ 75 \\ \underline{72} \\ 3 \end{array} \qquad \begin{array}{r} 122\ \tfrac{6}{6} \\ 6\overline{)737} \\ \underline{6} \\ 13 \\ \underline{12} \\ 17 \\ \underline{12} \\ 5 \end{array}$$

TL PTS	
2	100%
PTS.	%
1	50

Divide.

$$\begin{array}{r} .006 \\ 6\overline{).036} \end{array} \qquad \begin{array}{r} 12.02 \\ 12\overline{)144.24} \end{array}$$

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MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F -Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	CJC	Pre-test									
10-1	CJC	2			Read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	CJC	2	10	CET				4/4	100	2/4	50
10-2	CJC	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	14				
			7	01		20	14				
			12	03		10	0				
10-3	CJC	3	15	CET	(Pad)			8/8	100	3/3	100
10-3	CJC	4	10	CET	(Pad)			4/4	100	3/3	100
10-4	CJC	5	10	CET	(Pad and half)					3/3	100
10-4	CJC	6	14	CET	(Pad)			6/6	100	2/2	100
10-4	CJC	7	13	CET	(Pad)						

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
DATES		9-30							

P1 – 1968

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME ______________________ STUDENT NUMBER ______________ UNIT ______________

SKILL BOOKLETS								CURRICULUM TEST			
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	PART 1		PART 2	
								NO. OF POINTS	%	NO. OF POINTS	%

Here is a copy of Ralph's work on Page 13, CET for Skill 7.

He has mastered the work for Skill 7 but his work in the 2nd section indicates a deficiency in Skill 8. If you remember, he also showed lack of mastery in Skill 8 on his Pre-test.

Ralph is therefore ready for a prescription for Skill 8.

Write your prescription by reviewing the STS material which follows the CET. You may then again check what you prescribed with our prescription for Skill 8 on Pages 101 and 102.

CET I

Divide.

TL. PTS.	
4	100%
NO. OF PTS.	-
3	75
2	50
1	25

1.2
48) 57.6
48
96
96

2.01
58) 116.58
116
58
58

2.83
29) 82.07
58
240
232
87
87

4.825
9) 43.425
36
74
72
22
18
45
45

Solve the problems. Label your answers.

TL. PTS.	
2	100%
NO. OF PTS.	
1	50

Kevin wanted to put the same number of toys in each of his 5 boxes. He had 6 tops, 15 blocks, 3 toy cars, and 12 balls. How many toys did he put in each box and how many were left over? 7 r 1

Joe, Lou, and Irwin joined together in a bottle cap club. Joe had 12 bottle caps, Lou had 13 bottle caps, and Irwin had 10 bottle caps. They decided that each member should have the same number of bottle caps. If they divided the number up equally, how many would each have and how many would be left over? 9 r 3 X

LEVEL	UNIT	SKILL	PAGE
F	06	7	10

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MATHEMATICS

Name ____________________ Date ____________________

Class ____________________ Number ____________________

Standard Teaching Sequence

REVISED DEVELOPMENTAL EDITION

- *based upon materials developed by the*

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LEARNING RESEARCH AND DEVELOPMENT CENTER
University of Pittsburgh

- *distributed by*

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- *written and revised by*

the staff of Appleton-Century-Crofts
under the direction of Jerome D. Kaplan

INDIVIDUALLY PRESCRIBED INSTRUCTION

LEVEL F, DIVISION (06), SKILL 8

TO THE STUDENT

Solve this problem.

Mike has 36 baseball cards and 42 football cards. He decides to give them all to his 3 friends. If Mike divides them evenly among his 3 friends, how many will each friend get?

$$\begin{array}{r} 36 \\ +\underline{42} \\ 78 \end{array} \qquad\qquad 3\overline{)\,78}$$

Answer

26

Fill in the missing numerals.

Farmer Brown's chickens laid 156 eggs.

How many dozens of eggs did the chickens produce?

How many eggs are in a dozen? _____

What mathematical process do we use to find how many dozens there are? ________

If you answered "division" you are correct. What is the divisor?

_____

What is the dividend? _____

Do the division.

How many dozens of eggs did Farmer Brown have? _____

TOTAL POINTS	NUMBER CORRECT
6	

LEVEL	UNIT	SKILL	PAGE
F	06	8	1

Read carefully and answer the questions. Put your answers in the blanks.

Work space

Mr. Clark drove 1080 miles to Chicago at an average speed of 60 m.p.h. How many hours did it take him to get there.

____

Olivia's rich uncle died and left his fortune to be divided evenly among Olivia and her two brothers. The fortune was $20,678, but $\frac{1}{2}$ of it was spent on taxes, lawyer's fees, and other estate debts. How much did Olivia finally get?

TOTAL POINTS	NUMBER CORRECT
2	

LEVEL	UNIT	SKILL	PAGE
F	06	8	2

Solve these two-step problems. Put your answers in the blanks.

Work space

In his marble collection, Alex had 71 marbles. When his brother went to college he left Alex a collection of 35 marbles. Alex wants to divide his total marble collection evenly into 2 boxes. How many will be in each box? _____

In Moro Lake there are 233 happy worms and 127 sad ones. The 72 fish who live in the lake have made a bargain that each fish will eat the same number of worms. How many should each fish eat? _____

Mrs. Duke bought 12 antique dinner plates. The next week she bought 14 more. Her total bill for dinner plates was $130.00. If each plate cost the same amount, how much did each one cost? _____

TOTAL POINTS	NUMBER CORRECT
3	

LEVEL	UNIT	SKILL	PAGE
F	06	8	3

Some problems cannot be divided evenly. One way to write a remainder is as a whole number

Work space

There are 32 boys who want to be on baseball teams. If there are 9 boys on each team, how many teams will be formed? How many boys will be left?

$$\begin{array}{r} 3 \text{ R. } 5 \\ 9\,\overline{)\,32} \\ 27 \\ \hline 5 \end{array}$$

_____ teams

_____ boys left

Another way to write a remainder is in the fractional form.

If Paul divides 32 feet of wood into 9 equal pieces, how long will each piece be? ________

$$\begin{array}{r} 3\,\frac{5}{9} \\ 9\,\overline{)\,32} \\ 27 \\ \hline 5 \end{array}$$

Each piece will be _____ feet long. The remainder is part of the quotient.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	8	4

Solve these two-step problems.

The Acme Rent-A-Car Company has just bought 347 Fords and 285 Ramblers. If the company owns 30 local renting garages, and wishes to have an equal number of cars in each garage, how many cars will there be for each garage? How many cars will be left over for an emergency?

Work space

_____ cars in each garage.

_____ left over for emergencies.

The Petrillo Construction Company has 253 pounds of Grade A sand and 391 pounds of Grade B sand which they are going to mix and divide evenly among their 5 trucks. How many pounds of sand will be on each truck?

_____ pounds on each truck

For extra practice, do Page 8.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	8	5

Solve these two-step problems.

Work space

Mr. Hermann buys 949.9 pounds of ostrich food each week. Each day he feeds $\frac{1}{7}$ of this food to each of his 59 ostriches. How many pounds of food does each ostrich eat per day? Express the remainder in decimal form.

_____ pounds

A scientist bought 27 8-oz. packages of a certain chemical and fed an equal amount of it to his 9 rats. How many pounds did each rat get? Express the remainder in decimal form. (Remember that 1 lb. = 16 oz.)

_____ pounds

For extra practice, do Page 9.

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	8	6

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

CET I

Solve each word problem. Label your answer.

Larry has a paper route in his neighborhood. One week Larry made $5.32 selling papers. He made $4.96 the next week and $5.47 in the third week. What was Larry's average for each week?

____

Marie made flower baskets for her friends one day in the summer. She picked 18 petunias, 15 roses and 16 daisies. She made baskets for her 5 friends and put the same number of flowers in each basket. How many flowers did she put in each basket, and how many flowers did she have left over?

____

LEVEL	UNIT	SKILL	PAGE
F	06	8	7

Solve these two-step problems

Work space

At the baseball game, the cheering section was composed of 23 sixth graders, 21 fifth graders, and 22 fourth graders. They wanted to have the same number of cheerers on each of the 7 benches. How many sat on each bench? Were there any left over?

_____ on each bench

_____ left over

Paula buys 3 licorice whips which are each 18 inches long. If she divides them evenly among 4 friends and herself, how many inches of licorice will each of them get. Express the remainder in fractional form.

_____ inches each

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	8	8

Solve these two-step problems.

Work space

Helen won $122,431.68 in the Irish Sweepstakes. She promised to divide $\frac{1}{4}$ of the money evenly among her 24 classmates. How much will each lucky classmate get?

__________ per classmate

Batman uncovered a group of 11 smugglers who had smuggled 29 diamonds into the country. They intended to sell the diamonds for $12,500 apiece and divide the money equally among themselves. How much would each smuggler have made if Batman had not caught them? (Carry the decimal 2 places.)

__________ per smuggler

TOTAL POINTS	NUMBER CORRECT
4	

LEVEL	UNIT	SKILL	PAGE
F	06	8	9

CET II

TL. PTS.	
2	100%
NO. OF PTS.	%
1	50

Solve each word problem. Label your answer.

When the big circus came to town, they painted eight of their elephants blue, six of them red and seven of them yellow. There were 4 doors from the circus ring. If the same number of elephants left from each door, how many elephants left from each door and how many were left in the ring?

____

Terry and her mother traveled 55 miles by car the first hour of their trip. They traveled 62 miles the second hour and 47 miles the third hour. How many miles per hour did they average in the three hours?

____

LEVEL	UNIT	SKILL	PAGE
F	06	8	10

LEVEL F, DIVISION, SKILL 8

OBJECTIVE: Solves two-step word problems with division skills to this point. Chooses manner of writing remainder according to the nature of the problem.

STANDARD TEACHING SEQUENCE

Page		Supplementary Material
1.	Answers questions about a division problem; solves problem.	
2.	Solves one and two-step division problems; no remainders.	
3.	Solves two-step division problems; no remainders.	
4.	Completes examples of two-step division problems with whole number and fractional remainders.	
5.	Solves two-step division problems with whole number and fractional remainders.	8
6.	Solves two-step division problems with decimal remainders.	9
7.	CET I.	10
	CET II.	

Circle pages that are to be done.

As indicated on the previous prescription sheet Ralph demonstrated mastery in Skill 7. The teacher, knowing he works well with his peers, used Instructional Technique, 02, for Pages 3 & 4.

Therefore, from reviewing his whole prescription, he is assigned the Post-test for the entire unit. Assign the Post-test on your Prescription Sheet.

ipi MATHEMATICS PRESCRIPTION SHEET

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
9-30	C.J.C.	Pre-test									
10-1	C.J.C.	2			read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	[illegible]
10-2	C.J.C.	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	12				
			7	01		20	14				
			12	03		10	0				
10-3	C.J.C.	3	15	C.E.T.				8/8	100	3/3	100
10-3	C.J.C.	4	11	C.E.T.	(pad)			4/4	100	3/3	100
10-4	C.J.C.	5	11	C.E.T.	(pad 2nd half)					3/3	100
10-4	CJC	6	14	CET	(Pad)			6/6	100	2/2	100
10-4	CJC	7	13	CET	(Pad)			4/4	100	1/2	50
10-5	CJC	8	Read Student Page								
			1			5	3				

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
02	Peer Tutor
03	Small Group
04	Large Group
05	Seminar
07	Independent Study
11	Tutor of Others
MATERIALS	
06	Curr. Texts
08	Film Strips
09	Records/Tapes
10	Research
12	Manipulative Devices

PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100						
②	4	3	75						
③	2	0	0						
④	4	2	50						
5	5	5	100						
⑥	3	0	0						
7	4	4	100						
⑧	3	2	67						
	DATES	9-30							

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ipi
MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Ralph Stoney

STUDENT NUMBER ____________________

UNIT F-Division

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-5	CJC	8	3	02		3	3				
			4	02		4	4				
			6			2	2				
			7	CET				2/2	100		
10-6	CJC		Post Test								

This is a copy of the Post-test which Ralph completed. As you examine it you will see that he has mastered every skill in the unit.

Also notice on the following Prescription sheet that the aide placed his Post-test socres on the sheet next to the Pretest scores.

The teacher must now close his prescription. She does this by writing: "mastery", the date and her initials in the top right hand corner.

Do this on your sheet to close the prescription out.

ipi MATHEMATICS POST-TEST

Name Ralph Stoney
Class 6
Date 10-6
Number 4444

SKILL 1

TL. PTS.	
[✓ 4]	[✓ 100%]
NO. OF PTS.	%
3	75
2	50
1	25

LEVEL F, DIVISION (06)

Division: Directs student to divide a two- (or more) digit dividend by a two- or three-digit divisor; to write remainders as fractions; to divide decimal numbers to hundreds by a one-or two-digit number; to solve two-step word problems.

Divide by using repeated subtraction.

$$\begin{array}{r}70\\-35\\\hline 35\end{array}\qquad\begin{array}{r}35\\-35\\\hline 0\end{array}$$

70 ÷ 35 = 2

$$\begin{array}{r}68\\-13\\\hline 55\end{array}\qquad\begin{array}{r}55\\-13\\\hline 42\end{array}\qquad\begin{array}{r}42\\-13\\\hline 29\end{array}\qquad\begin{array}{r}29\\-13\\\hline 16\end{array}\qquad\begin{array}{r}16\\-13\\\hline 3\end{array}$$

68 ÷ 13 = 5R3

$$\begin{array}{r}45\\-11\\\hline 34\end{array}\qquad\begin{array}{r}34\\-11\\\hline 23\end{array}\qquad\begin{array}{r}23\\-11\\\hline 12\end{array}\qquad\begin{array}{r}12\\-11\\\hline 1\end{array}$$

45 ÷ 11 = 4R1

$$\begin{array}{r}78\\-21\\\hline 57\end{array}\qquad\begin{array}{r}57\\-21\\\hline 36\end{array}\qquad\begin{array}{r}36\\-21\\\hline 15\end{array}$$

78 ÷ 21 = 3R15

F DIVISION (06) POST-TEST

SKILL 2

TL. PTS.	
[✓ 4]	[✓ 100%]
NO. OF PTS.	%
3	75
2	50
1	25

Divide.

$$\begin{array}{r} 4 \\ 23\overline{)92} \end{array} \qquad \begin{array}{r} 53 \\ 53\overline{)2{,}809} \end{array}$$

$$\begin{array}{r} 19\text{ R }107 \\ 193\overline{)3{,}474} \end{array} \qquad \begin{array}{r} 862 \\ 38\overline{)32{,}756} \end{array}$$

SKILL 3

TL. PTS.	
[✓ 2]	[✓ 100%]
NO. OF PTS.	%
1	50

Divide. Round off the numbers and estimate to check your answers.

Check

Check

$$\begin{array}{r} 40 \\ 48\overline{)1{,}920} \\ \underline{192} \\ 00 \end{array} \quad \begin{array}{r} 38 \\ 50\overline{)1900} \end{array} \qquad \begin{array}{r} 19\text{R}3 \\ 32\overline{)611} \end{array} \quad \begin{array}{r} 15 \\ 40\overline{)600} \end{array}$$

TL PTS.	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Divide. Write the remainder using R.

5R23
79) 418

65 R53
67) 4,408

39R42
238) 9,324

28R70
125) 3,570

F DIVISION (06) POST-TEST **SKILL 5**

5	100%
NO. PTS.	%
4	80
3	60
2	40
1	20

Ring all of the expressions in each row which are equal to the boxed fraction at the beginning of the row.

$\frac{1}{4}$	[✓ $4\overline{)1}$] $4 \div 1$ [✓ $1 \div 4$] $1\overline{)4}$ 1^4
$\frac{18}{6}$	$18\overline{)6}$ 18×6 [✓ 3] [✓ $6\overline{)18}$] $18 - 6$
$\frac{5}{5}$	[✓ $5\overline{)5}$] [✓ 1] 5 [✓ $5 \div 5$] $\frac{5}{4}$
$\frac{16}{3}$	$5\frac{1}{5}$ [✓ $16 \div 3$] [✓ $5\frac{1}{3}$] $3\frac{1}{5}$ $3 \div 16$
$\frac{42}{5}$	$42\overline{)5}$ $5\frac{1}{4}$ $8\frac{1}{5}$ [✓ $5\overline{)42}$] [✓ $8\frac{2}{5}$]

F DIVISION (06) POST-TEST

SKILL 6

TL. PTS.	
3	100%
NO. OF PTS.	%
2	67
1	33

Divide. Write the remainder as a fraction.

$\begin{array}{r} 10\frac{3}{8} \\ 8\overline{)83} \end{array}$

$\begin{array}{r} 31\frac{1}{4} \\ 4\overline{)125} \end{array}$

$\begin{array}{r} 24\frac{1}{9} \\ 9\overline{)217} \end{array}$

SKILL 7

TL [illegible]	
4	100%
NO. OF PTS.	%
3	75
2	50
1	25

Divide.

$\begin{array}{r} .051 \\ 5\overline{).255} \end{array}$

$\begin{array}{r} 3.06 \\ 47\overline{)143.82} \end{array}$

$\begin{array}{r} .312 \\ 7\overline{)2.184} \end{array}$

$\begin{array}{r} .03 \\ 29\overline{).87} \end{array}$

F DIVISION (06) POST-TEST

SKILL 8

[illegible]	
[✓ 3]	[✓ 100%]
NO. OF PTS.	%
2	67
1	33

Solve. Label each answer.

Sally and Fred had a lemonade stand. One day they made $1.25 profit after paying $.30 for lemonade mix. If they sold 31 glasses of lemonade that day, how much did they charge for each glass?

$.05

Bernadine mixed 9 cups of popcorn and one cup of peanuts to make popcorn-peanut balls. She made six balls from the mixture. How much of the mixture did she use for each ball?

1$\frac{2}{3}$ cups

The teacher had 25 pieces of lemon candy, 30 pieces of orange candy, and 24 pieces of lime candy. She gave each of the 19 children in her class as many pieces of candy as she could, being careful to give each child the same amount. How many pieces of candy were left over?

3 pieces of candy

ipi MATHEMATICS

MATHEMATICS PRESCRIPTION SHEET

Mastery 10-6 cjc

STUDENT NAME Ralph Stoney

STUDENT NUMBER

SCHOOL STAMP

GRADE 6 ROOM 230 UNIT F-Division

UNIT DATES	
UNIT BEGAN	9-30
UNIT ENDED	10-6
DAYS WORKED	

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
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10-1	C.J.C.	2			read stud. pg.						
			7			4	4				
			8	02	Paul W.	6	6				
10-2	C.J.C.	2	10	C.E.T.				4/4	100	2/4	50
10-2	C.J.C.	3			read stud. pg.						
			1			12	12				
			3			16	16				
			4			14	12				
			7	01		20	14				
			12	03		10	0				
10-3	C.J.C.	3	15	C.E.T.				8/8	100	3/3	100
10-3	C.J.C.	4	10	C.E.T.	(pad)			4/4	100	3/3	100
10-4	C.J.C.	5	10	C.E.T.	(pad 2nd half)					3/3	100
10-4	CJC	6	14	CET	(Pad)			6/6	100	2/2	100
10-4	CJC	7	13	CET	(Pad)			4/4	100	1/2	50
10-5	CJC	8	Read	Stud. Pg.							
			1			5	3				

INSTRUCTIONAL TECHNIQUES	
CODE	SETTING
01	Teacher Tutor
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PRE AND POST TEST SCORES									
SKILL NUMBER	MAX POINTS PER SKILL	PRE SCORE	%	POST SCORE	%	POST SCORE	%	POST SCORE	%
1	4	4	100	4	100				
②	4	3	75	4	100				
③	2	0	0	2	100				
④	4	2	50	4	100				
5	5	5	100	5	100				
⑥	3	0	0	3	100				
7	4	4	100	4	100				
⑧	3	2	67	3	100				
	DATES	9-30		10-6					

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MATHEMATICS PRESCRIPTION SHEET (cont'd.)

STUDENT NAME Ralph Stoney

STUDENT NUMBER

UNIT F-Division

SKILL BOOKLETS								CURRICULUM TEST			
								PART 1		PART 2	
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	INSTRUCTIONAL NOTES	TOTAL POINTS	NUMBER CORRECT	NO. OF POINTS	%	NO. OF POINTS	%
10-5	CJC	8	3	02		3	3				
			4	02		4	4				
			6			2	2				
			7	CET				2/2	100		
10-6	CJC		Post	Test							

The last thing the teacher or student must do is mark the appropriate box on the Student Profile sheet.

You will see that Ralph's Student Profile Sheet which follows is marked.

He is now ready to begin another now unit.

ipi
MATHEMATICS

STUDENT PROFILE

Name Ralph Stoney Grade 6 Room 230

MATHEMATICS AREA	A	B	C	D	E	F	G	H
NUMERATION (01)	☒	☒	☒	☒	☒	☒		
PLACE VALUE (02)	▨	☒	☒	☒	☒	☒		
ADDITION (03)	▨	▨	☒	☒	☒	☒		
SUBTRACTION (04)	▨	▨	☒	☒	☒	☒		
ADDITION/ SUBTRACTION (34)	☒	☒	▨	▨	▨	▨	▨	
MULTIPLICATION (05)	▨	▨	▨	☒	9-22/M	9-30/M		
DIVISION (06)	▨	▨	▨	☒	9-25/M	10-6/M		
MULTIPLICATION/ DIVISION (56)	▨	▨	▨	▨	▨	▨	▨	
COMBINATION OF PROCESSES (07)	▨	▨	☒	9-19/M	9-28/M			
FRACTIONS (08)	☒	☒	☒	☒	☒			
MONEY (09)	▨	☒	☒	☒	☒		▨	▨
TIME (10)	▨	☒	☒	☒	☒			
SYSTEMS OF MEASUREMENT (11)	▨	☒	☒	☒	☒	☒		▨
GEOMETRY (12)	▨	☒	☒	☒	☒	☒		
SPECIAL TOPICS (13)	▨	▨						

You have now finished another entire Case Study and are ready for Case Study 5. Feel free to discuss any unclear prescriptions or decisions with your trainer or other trainees.

DEVELOPING A PRESCRIPTION

Case Study - Type 5

INDIVIDUAL CHOICE

CASE STUDY FIVE

The following is an optional activity only to be used if pupils are available.

At this point you are to choose a child from the school in which you are training. You will be given the student's IPI Records from his entry into the program. You are to review carefully the student's Placement Test results and his work progress up to the present time.

Some things to look for to help you better understand the child are:

1. The child's Placement Test results
2. The number of units he has completed
3. Patterns of learning difficulties
4. Performance results on tests
5. Difficulty in a particular unit at different levels
6. Instructional techniques in which the child works well
7. Length of prescriptions
8. Types of material assigned
9. Length of time required to complete a page, a prescription, a unit

It is then suggested that you confer with the child's teacher to discuss any questions you may have concerning decisions on his records, and the learning characteristics.

Here are some questions you may wish to ask:

1. Does the child work well independently?
2. Does the child work well in small groups?
3. Does the child work well in large groups?
4. Does the child work well in a peer tutor situation?
5. Does the child become frustrated easily?
6. Does the length of a prescription matter to the child?
7. Does he correct his own work?
8. Is the child test conscious?

At this point you are ready to become actively involved in prescribing in IPI. Along with the children's regular teacher, you are to analyze their work and prescribe accordingly.

You may now select another student and begin the same procedure.

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A Six Volume Set

1 *INDIVIDUAL INSTRUCTION AND IPI*

2 *BEHAVIORAL OBJECTIVES AND THE IPI MATHEMATICS CONTINUUM*

3 *DIAGNOSIS OF STUDENT ACHIEVEMENT*

4 *DEVELOPING A PRESCRIPTION*
CASE STUDY 1

5 *DEVELOPING A PRESCRIPTION*
CASE STUDY 2

6 *DEVELOPING A PRESCRIPTION*
CASE STUDIES 3, 4 & 5

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